The London School of Economics and Political Science

Information society and the state: The Greek version of the information society paradigm

Dimitris Boucas

A thesis submitted to the Department of Management of the London School of Economics for the degree of Doctor of Philosophy, London, December 2009

ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

Declaration

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Abstract

The concept of the 'information society' has been systematically deployed to denote a new techno-socio-economic paradigm with information and communication technologies (ICTs) at the centre, which entails significant economic and social transformations and bears implications for governance and potential for development and quality of life. Departing from the deterministic view of information society as a set of uniform societal arrangements, the thesis examines its national variations, as they emerge from the interaction between ICTs and relevant policies with pre-existing social, political and economic realities. Drawing on a conceptual framework based on political economy and historical sociology, it proposes that the unfolding of any national information society is a contested process feeding on the historically formed relationship between the state and the national economy and society. This relationship is expected to inflect international policies and processes in quite idiosyncratic ways, leading to differentiated national information society trajectories, while the state is instrumental in articulating international policy directions with national societal arrangements.

Identifying an empirical gap in the examination and analysis in semi-peripheral and middle-income countries, the thesis seeks to address evolving characteristics and dimensions of the 'Greek case' of information society, stressing the dialectic between European policy and the national socio-cultural, political and economic idiosyncrasies, the role of the Greek state, as well as the weaknesses encountered in the process. The emphasis is on the period 1998-2008, which includes the first comprehensive strategy and provides the opportunity to analyse preliminary results of the policies adopted. The empirical material includes relevant policy documents, quantitative indicators, personal observations, as well as a set of elite interviews with policy-makers, ICT industry representatives and other actors involved in information society policies and processes.

Acknowledgements

Thanks should be extended to all my interviewees who gave their time generously and contributed to the formulation of several perspectives of the analysis, in particular Yannis Caloghirou, Theodore Karounos and Angelos Tsakanikas who were very helpful with empirical information throughout this process. Thanks are also due to Pavlos Klavdianos for his help in locating material and discussing ideas during the different stages of this research. I would also like to express my appreciation to my colleagues at LSE who were involved by giving comments and support. The biggest share of it should deservedly belong to my supervisor Jonathan Liebenau, who has provided thought-provoking suggestions and has been supportive in many respects throughout this effort. Certain foundations and bodies have provided essential funding at various stages of the process, including the British Sociological Association and the P.Bakala Foundation, whose generous support is much appreciated.

A PhD dissertation is a long process. Often, by the time it is finished substantial changes have happened in one's life.

My father George unfortunately died before this piece of work was completed; I will always remember fondly the moments when he would ask about the PhD progress and would offer his calm reassurance. Through this thesis I hope that I am giving something back both to him and to my mother Ketty for their multifaceted contribution to my upbringing and education.

The thesis was supposed to be my first child. However, before its completion, two sweet children established themselves as colourful counterpoints to the lonely and often dull process of writing up: my daughter Lydia-Rosa in 2006 and my son Alexis in 2009. I would like to dedicate the thesis to them both and thus welcome them to a world of difficulty and challenge.

Most of all, I would like to dedicate this work to Dina Davaki, my reference point and continuous source of inspiration, warmth, strength and conviction throughout this journey, who sustained its continuation and completion with at least as much enthusiasm and persistence as my own.

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Abbreviations

ADAE	Hellenic Authority for Communication Security and Privacy
ADEDY	Confederation of Civil Servants
CSF	Community Support Framework
EDET	National Research and Technology Network
EETT	Hellenic Telecommunications and Post Commission
EPY	Greek Association of Information Technology and Communications Scientists and Professionals
EU	European Union
GSEE	General Confederation of Greek Labour
IS	Information Society
ITU	International Telecommunications Union
KBE	Knowledge-based Economy
KEDKE	Central Union of Greek Municipalities and Communities
OPIS	Operational Programme for the Information Society
OTE	Hellenic Telecommunications Organisation
SEB	Federation of Greek Industries
SEPE	Federation of Hellenic Information Technology & Communication Enterprises
TEE	Technical Chamber of Greece

CHAPTER 1: INTRODUCTION - THE INFORMATION SOCIETY AND THE STATE

Indeed, we are in the midst of a worldwide effort, organised by many different companies and governments in many different ways, to make computer communication a transcendent spectacle ... Ev erything from advertising to trade shows, from demonstration projects to conferences, speaks of a campaign to market the magic, to surround computer communication with power, speed, and the promise of freedom' (Mosco 1998, p.61).

While information exchange and communication has been at the core of every society historically, contemporary Western societies have witnessed the culmination of institutional and social arrangements where information exchange, processing, storage, modification and deployment is carried out by increasingly sophisticated information and communication technologies (ICTs). Complex ICT technological ensembles are implicated in dramatic transformations in production processes, power relations and political organisation; in the redefinition of ways of living and working or cultural codes, spanning virtually all social, economic and political arenas; in the reformulation of time, space and social relationships, often in unintended or unforeseen ways; in complex and continuous dynamic interactions between the technical and the social at large.

At the heart of what is conceived of as a new ICT-based techno-economic paradigm (Freeman and Louçã 2001) is a logic and a language that transforms all inputs into information code universally compatible and understandable, process and exchanges this information at high speed and at low costs, in increasingly sophisticated ways across worldwide telecommunication networks. This powerful logic plays a pivotal role in the pervasiveness of ICTs across Western, but also non-Western economies and societies, to the extent that many theorists have over the last twenty years organised conceptual frameworks concerning the pervasive effects of ICTs and the

advent of what can be broadly termed 'the information society' (IS), the 'knowledge society', the 'information economy', or the 'knowledge-based economy' (KBE). [1]

In parallel, the spread of globalisation has been vastly theorised and researched along a number of economic, political, social and cultural dimensions (Hall et al. 1992, Waters 1995, Sklair 2000). Hobson and Ramesh (2002) summarise the theorisation of the relationship between the state and globalisation by referring to two extreme schools of thought. On the one hand, the 'structuralist' approach, claiming that globalisation challenges the viability of the state or at least forces it to conform to the new global reality. On the other hand, the 'agent-centric' approach arguing that states can mitigate and even shape global structures.

The numerous challenges that globalisation posits for the nation-state[2] have been reflected in new theorisations of power, politics and governance that map shifting power arrangements away from the traditional system of nation-states towards governance regimes that include both state and non-state actors at the sub-national, the national and the transnational level (Held and McGrew 2002). Indeed, national states have reacted to global challenges by forming alliances at the international level (e.g. EU), by shifting power to international institutions (WTO, IMF, transnational

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[1] The information economy idea refers to an economic organisation where information and knowledge tasks (as opposed to production and industrial practices) dominate economic activity. Alternatively, the terms 'knowledge economy', or 'knowledge-based economy', are often used (see May 2002). The term 'information society' is rather broader and denotes a form of societal organisation where the processing and exchange of information and knowledge pervades not only economic activity, but virtually all spheres of social life, which are as a result transformed in incremental or radical ways (Webster 2002). May (2003) is a compilation of interesting articles.

A knowledge society is defined as one where knowledge is being created, diffused and deployed in accelerated ways through ICTs; where increasingly sophisticated products codify and manage knowledge; and where there is a perception of knowledge as a strategic asset for individuals, firms and nations. Under these circumstances, one can speak of 'knowledge policies', namely policies regarding: knowledge creation (supporting basic and applied research, the culture industries, promoting interchanges between different cultures and groups); knowledge diffusion (promoting broadband networks, Internet access, content industries, education reforms); knowledge utilisation (supporting product and process innovation, knowledge management and learning in firms and public organisations, international partnerships for innovation) (Rodrigues 2003).

[2] Following Giddens, we take the nation-state to be a set of institutional forms of governance maintaining an administrative monopoly over a territory with demarcated boundaries, its rule being sanctioned by law and direct control of the means of internal (police) and external (military forces) violence (Giddens 1995).

policy regimes) and by decentralising authority towards regional and local resources, non-governmental organisations or other groups of civil society.

Globalisation has been routinely linked with the spread of digital ICTs, which enable the operation of economic, political and cultural processes on a global scale. Inescapably, the literature on political globalisation and international relations has met the ICT/information society literature in what concerns the relationship between ICTs, politics and the nation-state. Various voices have come out, including those who see evident the diminishing role of the state in the light of the joint operation of globalisation and technological processes and the growing interdependence of world economy and polity, as well as those who identify increased technological state capacities, including data-processing, bureaucratic and surveillance functions (Herrera 2002).

There have also been extensive debates on the ways in which the ICT-enabled flows and the rise of the cyberspace (including the Internet) put into question the notion of state boundaries and the ability of states to control such information flows. Law enforcement and taxation of electronic commerce are two of the challenges that states seem to face. In international relations, neo-realists stress threats to national security and the formation of online communities that operate in parallel with state authority as dimensions of the new state of affairs. In political sociology, ICTs are said to annihilate time and space and transform the landscape of power away from the state, as social movements and a number of actors broadly belonging to civil society are given the opportunity to become politically active using new technologies and thus resist established power arrangements (Sassen 2002). Power is seen in these approaches as embedded in the practices, which, reproduced over time and space, constitute the material social structures of the information age (Nash 2000), and is linked with the capacity to control global networks, which are put to different uses (Castells 1996, 1998). Other authors investigate the ways in which ICTs change institutional contexts (Rosenau and Singh 2002), or the links between the technical and the political and the governance of the 'technological society' (Barry 2001). Such approaches provide a flavour for the intricate issues arising with respect to the operation of global processes, the place of the state as agent in their unfolding and as recipient of their outcomes and manifestations, but also the importance of ICTs as the

technological infrastructure of the 'information age', which becomes sine qua non for global economic, political and social arrangements in transformative and constitutive ways.

Sceptics have offered counter-arguments regarding the relative weight of cross-border flows compared to economic activity taking place within the limits of national economies and have presented evidence that the latter seems still to play a much greater part than the former. Some of them refuse to acknowledge the effects of globalisation (which they see as an ongoing process that has been evolving for centuries) and downplay the ostensible transformations of the roles and power of states, preferring to stress their continuing significance in a number of issues determining national and international politics (Hirst and Thompson 1996).

Critical approaches stress the continuing relevance of the state as mediator between international flows and national contexts, as a mechanism for integrating the national economy and polity into global arrangements and as a link between the rise of sub-national actors and the intensification of supranational arrangements. In this respect, the national state retains considerable capacities, in strategic terms in defence and the economy, in political terms as guarantor and defendant of the rights of its citizens, and in socio-cultural terms as intermediary between global processes and national or local social and cultural particularities (Smith et al. 1999).

The search for and formulation of international and national information policies has been a significant issue in the last thirty or so years. These processes are inextricably linked with various perspectives on the information society, which they use as a starting point so as to promote and justify particular policy directions (Duff 2004). At the European Union level, as we will see in chapter 4, there has been since the beginning of the 1990s the vision of a new society built on ICTs. This has been presented as a unique historical opportunity and has directed policy towards the promotion of ICT infrastructures at the national level, adopting necessary measures for the deregulation of telecommunication and media sectors so as to conform to the requirements of flexibility that are built into the new technologies.

Just as the state established market society in the 19th century (Polanyi 1957), the contemporary state is being instrumental in the realisation of a framework for the operation of the capitalist system in the 21st century based on the advent of the information society and the knowledge-based economy (IS/KBE). This thesis indeed sets out to bring together some of the problems occurring at the intersection of the emerging IS/KBE with the place and role of the state in the unfolding of these novel IS/KBE arrangements.

The IS/KBE is a particularly interesting terrain for examining the challenges facing the national state and its reaction to them for three main reasons:

Firstly, because the IS/KBE policy is a manifestation of the interplay between the transnational level (in our case the EU) and the national arena; this interplay is often seen as merely conflictual but it might be more fruitful to approach it as a contradictory relation (both conflictual and collaborative) in the formulation (at the transnational) and implementation (at the national) of specific policy agendas.

Secondly, because the IS/KBE can be seen as part of a broader socio-economic transformation related to the post-Fordist paradigm, due to the flexibility provided by ICTs. This includes a transformation of the role of the state from the Fordist era. If the IS/KBE is indeed the dawn of new societal arrangements, then there are governance and regulation questions that need to be asked, with ensuing implications for the role of the state; this role is redefined in line with new demands for economic reproduction and social cohesion. As the nation-state is the political institution that is called upon to promote and implement IS/KBE at the national level, it retains significant authority regarding the methods and procedures adopted, as well as the outcomes of the implementation process.

Thirdly, because there is hitherto a lack of substantial theorisation of the particular issues involved in the relationship between the IS/KBE and the nation-state. In parallel, there has been a notable absence of distinct examinations of the ways in which international ICT policies are diffused, translated and appropriated in the national and local context. In effect, there has been an often limited and superficial consideration of the national frame vis-à-vis the information society, regarding both

the role of the national state and the possibility of identifying and studying variable forms of the IS/KBE paradigm according to the national context.

The approach in this thesis is that the overarching IS/KBE policy paradigm, associated with a set of significant technological, socio-economic, political and cultural transformations, has to be seen in a balanced way that identifies transformations but also examines the ways in which these are articulated with pre-existing societal arrangements. Following from this, a second premise is that the national frame is significant as a context where such transformations are played out, which makes it an important base for an examination of IS/KBE developments. Based on these two premises, the IS/KBE in the national context does not involve merely the diffusion of ICT innovations and the replication of practices adopted in other national contexts, but is expected to be a process of *translation* into behaviours and practices according to the path dependency[3] of pre-existing national arrangements, including structural and institutional characteristics, technological, innovative and economic capacities, aspirations of actors and social coalitions involved. The third premise is that, when it comes to IS/KBE and the national frame, it is analytically useful and interesting to look into the coupling of the state (and its structures), the economy, and the civil society, and the ways in which this coupling informs and interacts with the evolution of the IS/KBE paradigm and its manifestations at the national level of reference.

Identifying an empirical gap in the examination and analysis of the IS/KBE in semi-peripheral and middle income countries, it seeks to address the evolving characteristics and forms of the 'Greek case' of the IS/KBE, stressing the dialectic between European information society policy and broad Greek social, political and economic aspects, the national manifestations of EU policies in the Greek context, and the role of the state in articulating the global and the national through rhetoric and policy. The emphasis of the study is on the period 1998-2008, which includes the first

[3] Meaning that 'the range of choice about change is strongly constrained by the outcome of past choices' (Radice 2000, p.723).

comprehensive information society strategy in Greece and provides the opportunity to assess preliminary results of the policies adopted.

The thesis is structured as follows: chapter 2 provides a literature review, which includes a review of theories of the IS/KBE, in particular around the debate of whether IS/KBE should be seen as a set of qualitative new arrangements radically breaking with the industrial paradigm or as a continuation of pre-existing socio-political and economic patterns; chapter 2 also includes an overview of the challenges facing the state drawing on globalisation theory and IS/ICT literature and a preliminary sketch of the role of the state in the information age.

Chapter 3 outlines the conceptual and methodological approach adopted in our study: conceptually, drawing on a high-level theory of the state and the IS/KBE and complementing it with political economy and historical sociology tools, as well as with a conceptualisation of the national context through the tools of historical sociology and the writings of several Greek scholars; methodologically, describing in detail the research design and the data collection methods pursued in the study.

Chapter 4 begins the empirical work by looking through key documents, analysing the philosophy behind them and presenting the EU information society policy in juxtaposition with the Greek information society policy; it also includes a first picture of the situation of the information society in Greece circa 2008, as emerging through a set of basic quantitative indicators, as well as through a selective presentation of the diffusion of ICTs in basic areas, e.g. business, the public sector and educational institutions.

Chapter 5 complements chapter 4 and contains the bulk of the qualitative empirical material gathered through interviews with key experts and players involved in the IS/KBE developments in Greece, which is presented as a set of themes linked with the conceptual framework of chapter 3. In contrast to chapter 4, chapter 5 provides a detailed, low-level picture of the implementation of information society policies as expressed in the policy documents and materialised by means of the Greek "Operational Programme for the Information Society".

Chapter 6 provides a reflection on the entire research process, brings the dominant ideas together, outlines the theoretical and empirical contributions of the work and draws broader implications for further research in the area of IS/KBE.

CHAPTER 2: THE INFORMATION SOCIETY AND THE STATE IN A GLOBAL WORLD

2.1. Introduction

In the postwar period, the vision of a new information society has featured prominently in the writings of futurologists, academics or technologists either of a utopian or of a dystopian orientation, who have signalled the coming of a new age. This dominant vision has regarded the oncoming information society as a set of new economic, social, political and cultural arrangements, deriving from the diffusion and generalised use of ICTs, involving new patterns of living and working, as well as using information and knowledge as central assets for competitive advantage, profit, growth and employment.

The vision of information society as epochal change has been accompanied by an emphasis on the opportunities presented by the new arrangements: some have been related to citizen empowerment, political participation, or a different relationship between citizen and government; others have focused on development, quality of life and alleviation of poverty. Contrary to these, the opposite potential trends have been identified, namely the threat of state surveillance or the exacerbation of economic disparities with increasing poverty and social polarisation (Martin 2005).

The dominant approach to information society has particularly guided the activities of policymakers and governments communicating the need to promote the diffusion of ICTs as a national goal, a necessary imperative of adjustment to an apparently overpowering reality. This has been a global policy-making movement involving powerful nations, including the US or Japan, international systems of states such as the UN, the EU and the OECD, international organisations such as the International Telecommunications Union and key global events (for instance, the recent World Summits on the Information Society in 2003 and 2005).

In this review, we start by outlining various streams of research that have informed or have been informed by this dominant vision of the information society and the

knowledge-based economy. After identifying some of the limitations of these theorisations, we proceed to present alternative views of the information society. The work of Castells, considered a milestone in information society theory and research, is given a reasonably extended presentation; this is followed by several other critical information society conceptualisations. At the end of this presentation we outline our own approach which is critical of the dominant version. Moving on, we turn to the contemporary nation state, its forms and functions, as well as the challenges that it faces under conditions of globalisation. We subsequently complement this with a presentation of the place of the state in information society or ICT-relevant literature, before arguing for the continuing significance of the nation-state and the ways in which this relates to information society arrangements.

2.2. The information society as a new techno-social paradigm

The debates regarding the transformative (or less so) economic, social, political, cultural and institutional effects of ICTs and the question whether the 'information society' can be seen as a new type of society have been at the heart of recent social theory.

A number of theorisations of information society as a qualitatively new type of society have been attempted since the 1960s. Frank Webster has undertaken a classification, as well as criticism of the relevant theories, dividing them as follows: a) technological, where the emphasis is on the dramatic technological innovations and the development of ICTs, which appear to be leading to significant qualitative changes; b) economic, which attempt to establish measures of the information society in economic terms; c) occupational, which argue that an information society is signified by the increasing amount of information-related occupations; d) spatial, which view the information society through the development of information networks bringing about dramatic implications for time and space; e) cultural, which focus on the tremendous increase of the volume of information in contemporary society, the spread of advertising, the increasing presence and power of the media and the plethora of signs (Webster 2002, 2006).

Technological theories have been around since the 1970s, emphasising the dramatic rate of technological innovation in ICTs (PCs, communications, cable and satellite TV and so on), which appears on such a scale that will 'lead to a reconstitution of the social world' (Webster 2006, p.9). Since the 1990s, a central element in these accounts has been the convergence between computers and telecommunications. Parallels have been drawn between the railways and canals of the industrial era and contemporary IT networks, including the Internet, which are seen as the infrastructure and 'information highways' of the information age. Chris Freeman and Carlota Perez's (1988) 'techno-economic paradigm', for instance, is a neo-Schumpeterian theorisation that emphasises ICTs as a technological revolution defining a new long wave in the economy with major institutional changes across the entire social spectrum (a new Kondratiev economic cycle). These are necessitated by the technical properties of ICTs, which generate constraints on firms' operations and strategies and lead to a new industrial organisation; an important element is the need for structural adjustments so as to follow the transformations taking place.

Webster objects to such approaches by stressing the difficulty of measuring the rate of technological diffusion and the amount of ICTs needed for a society to qualify as an information society. Evidence seems to be limited and technological definitions are often vague (e.g. unclear references to terms such as *new technologies* or *new media* or *new technological innovations*). A second and more important criticism is that most of these theories suffer from technological determinism: technology is seen as the main engine of society and social change follows technical change and is the result of the impact of technical change, often defining an era (e.g. the age of steam, the age of electricity, the age of computers). At the same time, the social, economic and political dynamics and circumstances of technological developments are ruled out (Webster 2006).

Economic theories attempt to measure information society in economic terms. Fritz Machlup's work is considered pioneering in analysing knowledge production and dissemination in the US industries; in this, he distinguishes five broad information industry groups (education, communication media, information machines, information services, and other information activities), ascribes an economic value to each of these and measures its contribution to GNP (Machlup 1962). Building on this model, M.

Porat has designed a computer model of the US economy in the late 1960s by dividing the economy into the 'primary' and 'secondary' information sectors, as well as the 'non-information' sectors. In the primary sector, knowledge and information are manipulated to produce new knowledge products and services; in the secondary, knowledge and information are deployed in material production, as well as distribution, sales, etc. The primary information sector can be directly evaluated and has a market price, while the secondary is less tangible and includes information activities that are part of the operations of firms and public organisations (Porat 1977).

Criticism to these theories highlights that the quantification of the economic significance of information, though useful, presents certain problems with regard to the categories included in and excluded from the information sector. In reality, the boundaries between information activities, such as R&D, and non-information ones, e.g. manufacturing, are often blurred. On the other hand, quantitative aggregate data homogenise very different informational activities, not all of them of equivalent significance (e.g. consumption of blockbuster films, vs. using an online educational library). In short, there is a great degree of subjectivity in categorising and quantifying. Overall, the empirical evidence regarding the economic significance of information refers to very diverse service sectors that cannot be analysed collectively (Webster 2006, Miles and Gershuny 1986). Moreover, technological determinism also enters these economic theories, in that they seem to overestimate the impact of ICTs across the economy.

In occupational theories, the argument is roughly that we have entered an information society since information work accounts for the majority of occupations. One of the most significant conceptualisation of the information society has been that of the American sociologist Daniel Bell (1973), who used the term 'post-industrial society'.

Bell classifies societies according to the predominant mode of employment: in the pre-industrial society there was agricultural manual labour, in the industrial society there was labour in manufacturing processes, while in the post-industrial it is employment in services that assumes the central position. He traces a historical continuity from the pre-industrial to the industrial and post-industrial society by means of rationalisation, which brings greater efficiency and increased productivity

within each stage and enables the passage to the next. Rationalisation leads to superfluous labour and increased profits and consumption, driving society first from the agrarian mode to manufacturing (industrial society) and then to services (post-industrial society). In the first stage, it is manual labour and physical power that defines work and societal organisation. In the second, it is technology and the use of energy that constitutes the fundamental social parameters and determines the content of jobs. In the third stage, it is organised knowledge that defines social relations and labour occupations. The decline of manufacturing with the decrease in the number of manual workers, the generation of a number of new service sectors and the overall increase in information-handling tasks and specialities lead to more white-collar occupations and the predominance of information and knowledge. These mark a new type of society, the post-industrial or information society (Bell 1973, Mackay 2001, Webster 2006).

As Webster argues, occupational definitions seem to overcome technological determinism, since they stress the transformative power of information, and not ICTs per se. But this is also controversial, as Bell contends that technology is the basis for productivity and productivity is the transforming agent of the economy, indirectly ascribing to technology the major role in social change. Further, he analyses society in terms of three independent realms, namely social structure, polity and culture. Social change emerges from changes in social structure, rather than the other two realms. Advanced societies are presented in a homogenised way, as characterised by similar technological and occupational arrangements, with increased emphasis on rationalisation. Therefore, Bell's approach contains neo-evolutionist and teleological elements (societies evolving towards some ultimate stage), leaving out differences in politics, culture and history. This idea of progressing through stages towards the information society has been seen as problematic.

Occupational theories seem also to suffer from the lack of adequate empirical evidence. Firstly, the distinction between a manufacturing and a service occupation is not clear-cut (Mackay 2001). Moreover, a number of service activities are related with

manufacturing production (e.g. distribution, advertising).[4] In addition, in the service sector there are production activities as well (while Bell speaks mainly of service consumption). Further, within the service sector, employment growth seems to be happening more in personal services, which have been central to modern economies and societies for a long time, rather than knowledge-based services (Garnham 2001a).

A further limitation in occupational theories concerns the allocation of workers into particular categories. Categorisation simply in terms of informational and non-informational work groups together people with very different professions. Such definitional problems have given rise to the claim that the expansion of services should be placed in a picture of intricate relations between manufacturing and other activities in contemporary economies, as well as relations between the economy, culture and politics; thus, it should not be interpreted as signalling a new kind of society but, rather, as highlighting the articulation of the past with present developments (Webster 2006, p.59).

Significantly, the pursuit of a quantitative measure of information work ignores the importance for society of certain types of information and does not say anything about hierarchies and positions of power. Indeed, it is important to differentiate the role of individuals who possess knowledge that is considered 'strategic' in contemporary society from those who merely carry out practical tasks. The rise in the 20th century of a professional class of intellectuals and expert technocrats who can exert influence upon business and politics challenges the quantitative methodology of standard occupational approaches and demands emphasis on the importance of the qualitatively different nature of the jobs of certain minorities (Webster 2006).

In spatial conceptualisations of information society, the notion of the information network is central; the connectivity that information networks offer presents dramatic implications for time and space and generates the possibility for a fully wired society.

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[4] Analysis by Gershuny has shown that of the increase in 'knowledge workers' during a sample period in the 1970s, 'less than a quarter appears to be due to the growth in the service industries, while, more than three-quarters comes from the increase in the proportion of employees in service occupations within industries' (Gershuny 1983, p.107, quoted in Golding 2000).

Daily life creates increasing awareness of this connectivity to networks of different kinds (e.g. through electronic transactions, or Internet surfing). The notion of information flow is also important in these approaches. Nevertheless, the problem of measurement recurs in such conceptualisations: should this measurement be done in terms of the spread of networks as technological systems or in terms of information flows? And how much of either is required so as to constitute an information society? Further, networks can be seen in a historical evolution as more sophisticated forms of communication in continuity with the early days of postal services, the telegram and the telephone, which poses the question why they should be seen as signifiers of a new type of society (Webster 2006).

Cultural approaches to information society focus on the proliferation of information circulated in everyday life and propagated by powerful mass media. Convergence of different media (television, video, audio, cable and satellite) through processes of digitisation and the spread of the Internet have played a significant role in information circulation. Advertising techniques have become increasingly sophisticated, addressing individual tastes and building identities through consumption. The spread of media under globalisation processes in the contemporary world has been accompanied by individualisation processes adopting and adjusting information content to personal lifestyles, interests, preferences (in food, dress, entertainment and other spheres of life), which are then fed back to the processes of production, distribution and advertisement. The symbolic level has become clearly more important, as signs and symbols are overwhelmingly deployed to convey power, status and wealth. The articulation of representation, production, consumption, identity formation and regulation of the cultural spheres has been theorised in the domain of cultural studies, which emerged in the context of the 'cultural turn' in social sciences (Du Gay 1997; Hall 1997; Thompson 1997).

While many scholars have placed the operation of these cultural processes in a context of global capitalism and have approached them in terms of media power relations, cultural representations, consumerist ideologies, formation of meaningful identities through cultural products or the structuring of social relations through new ICTs, some thinkers preoccupied with these cultural processes have gone as far as signalling the emergence of a post-modernist society or the post-modern condition (Lyotard

1984). In these conceptualisations, the plethora of signs and information in everyday life is apparently celebrated as the dominant characteristic of the contemporary world. The abundance and continuous and instantaneous communication of signs leads to the construction of what they term 'hyper-reality', i.e. the condition where nothing is real and meaningful, everything is relevant and artificial, any notion of truth is rejected, differences and individual preferences are promoted, fragmentation, reconstitution, bricolage and pastiche dominate; a situation where eventually the superficial is promoted and where no message has any meaning, where everything is reduced to just a sign that does not signify anything, a signifier without any signified (Baudrillard 1988; Poster 1990).

Globalisation literature has also dealt with the increasing presence of the symbolic level. Waters, for instance, suggests that globalisation means 'material and power exchanges in the economic and political arenas ... progressively becoming displaced by symbolic ones, that is by relationships based on values, preferences and tastes rather than by material inequality and constraint' (Waters 1995, p.124). Notwithstanding the truth of some of these claims, it is very hard to locate empirical evidence of the tendencies described by post-modernist theorists, though one is certainly aware of the multiplication of information and signs in everyday life. Even if significant and respectable evidence can be found, it has to be decided whether it means displacement or co-presence of the material with the symbolic. Criticism of these theories suggests that there is continuing evidence of 'hard' realities that cannot be subsumed by the symbolic level, e.g. inequalities on a planet in which 70% of resources are consumed by 15% of the population (Golding 2000).

Overall, the use of quantitative measures, such as the presence of more information or more information jobs, has been questioned, not least because of the definitions used to collect data (Menou and Taylor 2006). Further, it has been criticised as inadequate to sustain an argument about a qualitative break towards a new type of society. Qualitative measures are demanded to support such an argument, e.g. what kinds of professions, activities, power relations emerge in the contemporary world and how they are related to information (Webster 2006). Grouping different sectoral trends and dynamics together under the 'information society' or 'knowledge economy' umbrella is not helpful (Garnham 2000, p.14). The approaches signalling the advent of the

information society seem to neutralise or conceal such qualitative dimensions under an apparently uncontroversial reality of information domination. In this way, they also become a useful vehicle for a technocratic approach conveying the need for nations, groups of people and organisations to adapt to these 'objective' changes.

Some of the above conceptualisations defined the dominant view of information society and indeed triggered relevant policies. Bell's intention, for instance, was to 'forge a strong commitment to technological innovation as the mobiliser of economic and social progress' (Mansell 2008, p.4). De Sola Pool (1974) advocated information society policy with ICTs at its centre. Porat, in contrast, has been criticised for introducing a notion of 'information policy' that would cover too large a number of policy domains apparently penetrated by ICTs, including education, job satisfaction, quality of life, rehabilitation, equality of opportunity, energy planning, airline industry regulation or national security (Duff 2004). Such policy directions contained a strong prescriptive element as to what steps western societies should take to achieve progress through ICTs.

2.3. Between technological determinism and social constructivism

Based on evolving notions of information society, mainly drawn on theories mentioned in the previous section, a number of futurologists have made predictions on a future dominated by ICTs, while an equal number of politicians have introduced relevant political agendas since about the late 1970s. Often focusing on shifts in employment (either dystopian views of job losses, or structural changes involving move to service occupations and necessary skills adjustment), these social speculations and political projections, together with the academic theorisations mentioned above, were operating within assumptions of technological determinism. Technological determinism has approached technology as an autonomous force, exogenous to society and able to impose its own logic. The most extreme forms see technology as the prime factor determining social change, while more moderate views approach technology as one of the determinants of societal arrangements (Mackay 2001). Critics, however, have voiced concerns regarding the idea of ICTs determining the nature of societal configurations (Pruulmann-Vengerfeldt 2006). The question of

technological determinism is significant, as its policy implications are often exhausted to the need to adjust to the imperatives of new technologies.

Other approaches go beyond this ostensible need and treat technologies as essentially social and political products that arise under particular circumstances and derive from specific choices. Langdon Winner (1986), for instance, argues that technologies are inherently political: firstly, they are designed in ways that open certain possibilities or exclude certain others; secondly, they are compatible with different social arrangements, e.g. nuclear power requires a techno-military industrial complex, while solar power fits better with decentralised institutions.

Evolutionary approaches to technological innovation take into consideration macro processes, refer to 'technological paradigms', and the structures through which they are selected (including state, firms, institutions and others), diffused and eventually stabilised into a 'technological trajectory' adopted by the majority of firms in the economy (Dosi 1988). These processes involve the notion of technological momentum, which frames future technological developments and institutional and social realities. Subsequent technological developments unfold according to the needs of the existing technological systems (Rosenberg 1976), creating various forms of path-dependency. Often the pervasiveness of certain technologies (ICTs in particular) establishes logics and dynamics of its own, shaping social and political structures and patterns of personal and social life. Evolutionary approaches, however, tend to underplay the ways in which these selection structures are themselves socially shaped, thus presenting determinist undertones (Rammert 1997).

Science and technology studies have over the last twenty-five years or so struggled with the dynamics of causality between technology and society. Departing from the idea that technology determines social change, the social constructivist approach to technology has insisted that technological development, innovation and application is very much dependent on individuals, conditions, pre-existing structures and circumstances (Bijker, Hughes et al. 1987). Far from treating technology as an autonomous force that is context-free, abstract, imposing its objective logic, social constructivists focus on the particular historical and social context where technology is placed, as well as on the values and interests imbued in technical artefacts, claiming

that the social shaping of technology and the technical building of society are two aspects of the same process (Bijker 2001).

Building on social constructivist views, recent theorisations have addressed the 'technological society' (Barry 2001) or the 'technological economy' (Barry and Slater 2002); others, applying the so-called 'actor-network theory' have ascribed equivalent analytical value to the human and the technical artefact, treating both as actors that are inextricably linked in networks (Law 1992). Social constructivism has gradually gained considerable popularity across disciplines, e.g. international relations (Rosenau 2002).

Criticism of social constructivism, nonetheless, has highlighted its often extreme devotion to studies of technology development and use in context and the exaggerated potency of the human actor to twist and shape the infinitely malleable technology. Winner identifies three problems with this approach: firstly, that social constructivism seems to be paying little attention to the consequences of technical choice and technical change (for individuals, power distribution in society, etc.); secondly, that it deals with those who have the means and power to participate in the social shaping of technology, while leaving out the political biases that affect the spectrum of choices becoming available to relevant social actors; thirdly, that it only focuses on the social activities clearly connected with technical change and rules out the deeper and broader issues surrounding technological choices, including their externalities (Winner 1993).

Thus, social constructivism seems to be missing the *wider* technological, organisational, social, and political context, including changes in infrastructure, cultural and attitudinal changes, power relations and social conflicts (Kallinikos 2004, Rammert 1997). An implication of this is the bracketing of the constraints that are put into place by these wider arrangements. A second implication is the downplaying of technological effects, which are present, though not 'profoundly determining', as Bell would have it (Mackay 2001, p.32).

2.4. The ambiguous position of Castells

Such wider arrangements and concerns have been addressed by Manuel Castells in the most comprehensive account of the information society, namely his trilogy *The Information Age*, published between 1996 and 1998, with revised editions of Vol I and III in 2000. This work occupies a unique position within the relevant literature and deserves particular attention, due to its breadth of conceptualisation, as well as its systematic attempt to substantiate general claims and a macro level theoretical approach with empirical evidence from a number of contexts, entities, subjects and processes. Furthermore, it has been widely and wildly criticised as equivocal and contradictory.

2.4.1. Castells' approach

In *The Information Age*, which describes the 'historical period in which human societies perform their activities in a technological paradigm constituted around microelectronics-based information/communication technologies, and genetic engineering', Castells addresses the transformations taking place in social structures as a result of 'the prevalence of information networking as the organisational form of dominant activities' (2000, pp.5-6).

This new technological paradigm is treated as a technological revolution: 'While this technological revolution does not determine per se the emergence of a social system, it is an essential component of the new social structure that characterises our world: the informational society. By this concept, I understand a social structure where the sources of economic productivity, cultural hegemony and political-military power depend, fundamentally, on the capacity to retrieve, store, process and generate information and knowledge' (Castells 1994, p.21).

As Stalder (1998) notes, Castells draws on the Marxist tradition and uses the concept of 'mode of production' (meaning the social relationships of production),[5] while

[5] Castells contrasts between the capitalist mode of production, whose goal is the maximisation of profit, i.e. maximisation of the surplus value, and the statist model, whereby surplus is not economic, but rather stays with the state and whereby the goal is maximisation of power, meaning the imposition of

borrowing from Touraine that of 'mode of development', which denotes 'this complex, interacting system of technology and organisational processes, underlying economic growth and social change' (Castells 1989, p. 17), or the 'technological arrangements through which labour works on matter to generate the product, ultimately determining the level and quality of surplus' (Castells, 1996, p. 16). Each mode of development is defined by a central element in increasing productivity: in the agrarian mode of development, it is the increased amounts of labour power and land; in the industrial mode of development, it is the use of (new) energy sources in the production processes. In the present era, Castells identifies what he calls 'the informational mode of development' (or 'informationalism'), which has the generation, processing and distribution of information and knowledge at its core. In the informational mode of development, Castells argues, it is knowledge generation, information and symbol processing and communication that determine productivity levels. By pervading every aspect of society, the informational mode extends from production and permeates power and experience, alters social relationships and leads to new forms of social interaction, social control and social change (1996, pp.17-18).

The characteristics of informationalism as a technological paradigm according to Castells are: first, it comprises technologies that act on, modify and exchange information; second, by implication, it has profound pervasive effects across the entire economic and social landscape; third, it possesses a networking logic which serves increasingly complex interaction patterns and needs, while simultaneously creating new enhanced communicative patterns that would be inconceivable in the absence of ICTs; fourth, it provides an element of programmability and flexibility that permits reconfiguration of organisational processes, rearrangement and alterations of operating components according to user needs and changing circumstances; fifth, it facilitates convergence between the different technological subfields and integration into sophisticated interconnected information systems in order to take full advantage of the ICT potential, something which is also reflected in movements of ICT firms to form mergers, acquisitions, or strategic alliances with other industrial and business partners (ibid., pp.61-63).

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the goals of the political establishment by means of military capacity and organised ideological brainwashing and propaganda (1996, p. 16).

Castells distinguishes carefully between the information society and the 'informational society', 'in which information generation, processing, and transmission become the fundamental sources of productivity and power' (1996, p.21) and where ICTs promote networking as a 'dynamic, self-expanding form of human activity', which 'transforms all domains of social and economic life' (1998, p.336–7).[6] For some, the use of the term 'informational' is an attempt to avoid technological determinism (Heiskala 2003). The distinction is not translated into any operational difference between the two terms, which are often used interchangeably in the third volume of the trilogy (Stalder 1998, p.308).

The concept of 'network' is central in Castells' work: 'A fundamental feature of social structure in the Information Age is its reliance on networks as the key feature of social morphology. While networks are old forms of social organisation, they are now empowered by new information/communication technologies, so that they become able to cope at the same time with flexible decentralisation, and with focused decision-making' (Castells 2000, p.5).

The network is defined as a set of interconnected nodes and can be used to describe practically everything: 'What a node is, concretely speaking, depends upon the kind of concrete networks of which we speak. They are stock exchange markets, and their ancillary advanced service centres, in the network of global financial flows. They are national councils of ministers and European Commissioners in the political network that governs the European Union. They are coca fields and poppy fields, clandestine laboratories, secret landing strips, street gangs and money-laundering financial institutions, in the network of drug traffic...'(1996, p.470).

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[6] Information, taken to be data that have been organised and communicated, and knowledge, taken to be 'a set of organised statements of facts or ideas, presenting a reasoned judgment or an experimental result, which is transmitted to others through some communication medium in some systematic form' (Bell 1973, p.175) have been present in past societies, not least in the industrial society; nonetheless, their place is more enhanced and more complex in the ICT technological revolution, the reason being that production is organised around and productivity is based upon the application of knowledge for the generation of more knowledge, information processing for improving the deployment of technological tools and utilisation of information technology to ameliorate availability, interaction, communication and processing of knowledge (Castells 1996, p.17).

Castells later abandons the notion of 'information society' altogether for that of the 'network society'. Nevertheless, his strong emphasis on ICTs makes for most commentators the difference between the 'information society' and the 'informational society' or the 'network society' hard to discern (Stehr 2000).

2.4.2. Criticism of Castells

Castells' approach is overall controversial with regard to the position he takes vis-à-vis the question of the network society as signifying a radical break with previous industrial capitalist arrangements.

On the one hand, he argues that the global diffusion of ICTs has given rise to an informational global economy, which has not undermined the structural basis of the industrial economy, but has extended its potential through ameliorated production processes, the deployment of knowledge, information and management in production and distribution processes, i.e. projecting principles on which the industrial economy had been based on a global scale. At the same time, according to his analysis, the diffusion of ICTs on a worldwide basis has led to deep organisational, institutional and cultural transformations and has created new sets of values; therefore, he suggests that the ICT paradigm has modified the dynamics of the industrial capitalist paradigm. In this respect, the ICT revolution has given rise to a global economy that is not merely information-based, but it has become *informational*, in an analogous way that the Industrial Revolution was not only founded on new forms of energy, but it created a completely novel industrial culture, based on a new social and technical division of labour and eventually brought the industrial economy into place (Castells, 1996, p. 91).

Nonetheless, Castells also points out that '... the shift from industrialism to informationalism is not the historical equivalent of the transition from agricultural to industrial economies, and cannot be equated to the emergence of the service economy' (Castells 1996, p.92).

Further, he treats the emergence of the technological revolution and the diffusion of new technologies, not as accidental, but as a result of specific political choices

attributed to a number of factors, including the activities of certain nation states, in a historical period of the global restructuring of capitalism, for which it was an essential tool.[7] Specifically, he traces historically a set of parallel processes starting more or less in the mid-1970s, namely the revolution in ICTs, the restructuring of capitalism, as well as the legitimation crisis of the nation-states and their orientation towards market forces, competitiveness and liberalisation. The combination of these recent tendencies has shaped processes of economic, political and cultural globalisation and the emergence of what he calls 'the networking organisation' and have eventually brought about a new economic and social paradigm, the 'network society', with informationalism at its heart.

However, for many 'the strong impression persists throughout the three volumes that it is a process of capital-driven globalisation which continues to bear more responsibility for powerfully shaping our world', and that analytical priority is given to the emergence of informationalism as a new mode of development (Smart 2000, p.56). Calabrese, for instance, argues that there is in Castells a 'tendency to fetishise information and information technology', as he presents throughout his trilogy a number of social processes, 'some with scant mention of information technology's embeddedness or imbrications', and finally imposes on the reader the conclusion that informationalism is 'at the core of it all' (Calabrese 1999, p.174).

Indeed, for many thinkers, Castells seems to suggest more than 'a change within capitalism', but rather 'an epochal transformation' (Waterman 1999, p.375). The following quote supports this claim: 'We are just entering a new stage .... Because of the convergence of historical evolution and technological change we have entered a purely cultural pattern of social interaction and social organisation. This is why information is the key ingredient of our social organisation and why flows of

[7] The role played by ICTs has been absolutely instrumental in the realisation of a globalised economy: a) the new technological revolution has provided the facilities of time and space integration that led to new production and management processes purveying flexibility in firms vis-à-vis labour; b) it has generated a vast array of new products that have maintained high levels of consumption both in capital machinery and in consumer products, counterbalancing the curtailments in public spending that were deemed as necessary after the outbreak of inflation in the 1970s; c) it has enabled the global integration of financial markets in the beginning of the 1980s forcing national governments to conform with supranational policies proposed at the OECD level with the enhanced role of the International Monetary Fund, the World Bank and other international financial institutions (Castells 1996).

messages and images between networks constitute the basic thread of our social structure .... It is the beginning of a new existence, and indeed the beginning of a new age, the information age marked by the autonomy of culture vis-à-vis the material bases of our existence' (Castells 1996, pp.477-78).

Further, Castells often resorts to binary oppositions to denote the ways in which the new opposes the old: space of flows vs. space of places, territorial vs. virtual dynamics, global elites vs. the Fourth World, the net and the self, old labour movements vs. new gender ones. Critics wonder whether it might be more fruitful to approach these in a dialectic way, i.e. both being part of contemporary developments and linked with each other, an approach that would no doubt highlight both change and continuity (Waterman 1999, p.376).

Is Castells adopting the logic of homogenisation with eventual convergence of all societies towards the informational paradigm? He sums up his view as follows: 'While capitalism's restructuring and the diffusion of informationalism were inseparable processes on a global scale, societies did act/react differently to such processes, according to the specificity of their history, culture, and institutions. Thus, to some extent, it would be improper to refer to an Informational Society, which would imply the homogeneity of social forms everywhere under the new system .... Yet we could speak of an Information Society in the same way that sociologists have been referring to the existence of an Industrial Society, characterised by common fundamental features in their sociotechnical systems .... But with two important qualifications: on the one hand, informational societies, as they exist currently, are capitalist (unlike industrial societies, some of which were statist); on the other hand, we must stress the cultural and institutional diversity of informational societies' (1996, p.20).

Eventually, 'the new society emerging from such a process of change is both capitalist and informational, while presenting considerable historical variation in different countries, according to their history, culture, institutions, and to their specific relationship to global capitalism and information technology' (ibid., p.13).

Based on the above early writings, Castells seems to consider the network society as nothing more than an evolution within capitalism, extending and intensifying the logic of capitalist accumulation, rather than departing from the capitalist economic and social configurations. His references to 'informational capitalism' emphasise the element of continuity, as opposed to a radical break. As a result, certain analysts separate Castells from more deterministic conceptualisations, most significantly Daniel Bell's 'post-industrial society', or other approaches identifying radical historical breaks (e.g. theories of postmodernity) (Mackay 2001).

In later writings, Castells seems again to be following the logic of continuity, rather than radical change. Approaching the evolution and spread of the Internet as a socio-technological phenomenon, he argues that in the late 20th century 'three independent processes came together, *ushering in* a new social structure predominantly based on networks: the needs of the economy for management flexibility and for the globalisation of capital, production, and trade; the demands of society in which the value of individual freedom and open communication became paramount; and the extraordinary advances in computing and telecommunications made possible by the micro-electronics revolution' (2001, p.2, emphasis added).

Certainly this is not determinist language and this is made more explicit: 'The point of departure of this analysis is that people, institutions, companies, and society at large, transform technology, any technology, by appropriating it, by modifying it, by experimenting with it. This is the fundamental lesson from the social history of technology' (2001, p.4). Speaking of the Internet he declares that it 'is a particularly malleable technology, susceptible of being deeply modified by its social practice, and leading to a *whole range* of potential social outcomes –to be discovered by experience, *not proclaimed beforehand*' (ibid., p.5, emphasis added).

Here, Castells seems to come very close to social constructivism: 'In contrast to claims purporting the Internet to be either a source of renewed community or a cause of alienation from the real world, social interaction on the Internet does not seem to have a direct effect on the patterning of everyday life, generally speaking, except for adding on-line interaction to existing social relationships.' (2001, p.119). Ironically, then, he has invited criticism from those who think that 'Internet-related technologies

have directly altered the patterning of everyday life, including the ways we work, access and exchange information, shop, meet people, and maintain and organize existing social ties' (Gane 2005, p.475, italics in the original).

In his book on the Finnish information society, the argument is that 'information society can exist, and indeed does exist, in a plurality of social and cultural models, in the same way that the industrial society developed in very different, and even antagonistic, models of modernity, for instance in the United States and the Soviet Union, as well as in Scandinavia or Japan' (Castells and Himanen 2002, p.2).

Nevertheless, Castells argues that the network society is a new type of societal organisation with its own logic (the network logic), which he claims to be imposed on social and political processes, reconfiguring and redefining them. In this way, the economy becomes informational, global and networked; the firm is transformed towards the network enterprise; work and employment adopt flexible patterns and continuous occupational mobility; the state and the exercise of political power are mutated towards a network state characterised by power-sharing across different geographical scales (from the international down to the subnational and the local) and among different power holders (including NGOs and other political entities, information networks of capital, trade, science and so forth); relationships of production become globalised, labour segmented and social classes less coherent; consumption patters become diversified, individualised and unequal, with growing social polarisation; organisational hierarchies in all organisations are challenged; culture and meaning become increasingly fragmented (1996, 2000, 2001).

To be sure, there is plenty of truth in the transformations that Castells describes eloquently; the question however remains whether indeed all these processes of transformation 'are enacted by organisational forms that are built upon networks, or to be more specific, upon information networks' (2000, pp.14-15). For many, this overemphasis on the concept of network reveals a technocratic view of development whereby the ICT revolution shapes the network society. The frequent reference by Castells to the 'morphology of the network' as the dominant enabler of certain types of social action and disabler of certain others certainly lends itself to criticism of this sort: 'How can power reside in networks without reference to any other economic or

material basis?' (Mackay 2001, p.40).

The centrality of the network in Castells' analysis is also evident in the concept of the 'space of flows', which refers to 'the technological and organisational possibility of organising the simultaneity of social practices without geographical contiguity' (2000, p.14). The space of flows involves the technological (network) infrastructure, places (which are taken to be nodes on the network) and people located in specific places. However, in the space of flows meaning is generated by the flows and is not linked with the particular places, as is the case with traditional forms of space and place as we know them. Financial markets, transnational production networks, transnational media, but also transnational social movements, form examples of the space of flows. Castells seems to assume that although initially the space of flows coexists with the traditional space of places, the former gradually displaces the latter and becomes the dominant social logic in the network society (Stalder 1998). Put in another way, 'once introduced, and powered by information technology, information networks, through competition, gradually eliminate other organisational forms, rooted in a different social logic' (Castells 2000, p.16).

Castells then seems to be placing too much emphasis on the network paradigm, subsuming older capitalist institutional infrastructures, for instance bureaucratic models. For certain thinkers, networking practices do not seem to produce and organisation form as solid as bureaucracy (Kallinikos 2007). Likewise, Heiskala argues that the concept of the network seems to be inadequate as an overarching analytical device. It is overused, and sometimes imposed on national contexts (e.g. south Korea) which do not seem to bear network characteristics and on political entities (e.g. EU as a 'network state') which are built on complex governance systems, including some kind of hierarchy. Castells overemphasises the antithesis between hierarchical and network organisations and uses the concept without qualification as to the structures and power dynamics present in the network. As Heiskala suggests 'there are different types of networks, some of which are not hierarchical at all, some of which are very hierarchical, with some inbetween these two extreme ends of the continuum' (2003, p.240).

While for Heiskala the term 'informational revolution' is too vague to be used to analyse societal processes, for Garnham, 'Although Castells attempts to retain a notion of human agency and is careful to point to the importance and possibility of differing national policy responses and to the growing importance of social movements and local forms of cultural resistance, in the end the Information Society, as he presents it, is technologically determined. The source of the dynamic of social change and what are seen as epochal and global transformations in the structure of the economy, in social stratification, politics and culture are a technological paradigm based upon a cluster of innovation in information and communication technology largely stemming from Silicon Valley in the 1970s.' (2001a, p.3). In similar terms, Golding (2000) argues that Castells' approach is reminiscent of the modernisation thesis, in that he suggests that all societies will eventually simulate late twentieth-century southern California. Stehr makes the compatible argument that 'although Castells is not a strict proponent of technological determinism, a number of theses in his study tend to resonate unavoidably with the paradigm of technological determinism that stresses context-insensitive consequences of technical products rather than the social processes of innovation and deployment' (2000, p.85).

Castells indeed seems at points enthusiastic about discovering the novelty in all possible terrains, including the cultural realm, where he traces a new ethic in the information society, namely a 'spirit of informationalism' that has replaced the well-known 'spirit of capitalism' identified by Weber. The profundity and ethical foundation of the spirit of informationalism, is challenged, however, by Smart who argues that according to Weber it was profit-making that became the driving force of capitalism early on, displacing the work ethic; likewise, the ethical basis of informational capitalism seems also to be collapsing under a consumerist drive (Smart 2000).

To be sure, there is some degree of confusion regarding the cultural aspects of the network society. The 'spirit of informationalism' is celebrated as a spirit of innovation, experimentation, originality. For instance, innovation has been a key to the success of the Finnish information society model, mentioned above, the analysis of which has included a prominence ascribed to the 'hacker ethic' (Castells and Himanen 2002).

The spirit of informationalism is conflated with the 'culture of virtuality' or virtual culture, which is seen as the dominant cultural code of the network society and the network enterprise and which bears strong similarities to the ephemeral and eclectic culture of postmodernity (Harvey 1989). Garnham wonders whether we can empirically prove the existence of the 'spirit of informationalism' and whether virtual culture is indeed dominant and more importantly whether this cultural form is liberating or ideological, 'in the sense of distracting from underlying, more deeply rooted, structures of interest' (2004, p.179).

Castells also associates this 'spirit' with the culture or 'creative destruction', which arguably has been a characteristic of the capitalist system historically, rather than a defining cultural characteristic of a new epoch. Further, the imperative of innovation seems to pull state policies of a certain kind, namely liberalisation and deregulation, which ostensibly promote this innovative spirit (Patomäki 2003). In the end, one is left wondering whether the idea of the spirit of informationalism is not an attempt to fit the network paradigm with a certain culture which demands societal adjustments and policy directions in a deterministic way.

Throughout his work, Castells suggests both that informationalism is a novel technological and socio-economic paradigm and that it has been appropriated by capitalism for its own purposes. Speaking of the new economy, he argues that it is certainly capitalist. However, 'this is a new brand of capitalism, in which rules for investment, accumulation, and reward, have substantially changed'; further, 'since nothing authorises capitalism as eternal, it is essential to focus on the characteristics of the new economy because it may well outlast the mode of production where it was born, once capitalism comes under decisive challenge and/or plunges into a structural crisis derived from its internal contradictions' (2000, p.11).

This reveals a tension between the dynamics of informationalism and capitalism, i.e. informationalism challenging the dominance of capitalism through dynamic forms of networking and learning and networked forms of governance or capitalism impeding the realisation of an information society (Jessop 2000). While ambitious, challenging and far-reaching, his work does not seem to ultimately resolve this tension. On a

straight line between continuity and change in societal arrangements, Castells seems to be closer to the point of change in contrast to other critical approaches.

2.5. Information society as continuity –context and embeddedness of ICTs

The perspectives that are in concord with the dominant view of the information society as epochal change often emphasise the opportunities associated with ICT-driven new arrangements. For Mosco, however, all this is based on the 'myth' of the Information Highway, 'a story about how ever smaller, faster, cheaper, and better computer and communication technologies help to realise, with little effort, those seemingly impossible dreams of democracy and community' (1998, p.58).

The key to cultivating this myth is exactly the departure from history and the emphasis on transformation: 'The denial of history is central to understanding myth as depoliticised speech because to deny history is to remove from discussion active human agency, the constraints of social structure, and the real world of politics. According to the myth, the Information Age transcends politics because it makes power available to everyone and in great abundance' (ibid, p.60).

The majority of critical approaches to ICTs and the information society indeed prefer to view it not in terms of radical change from previous (western industrial) societal arrangements, but rather in terms of change *within* historical continuity. In doing so, they depart from an ahistorical perspective that reifies ICTs and emphasises their transformative effects out of historical context. On the contrary, they re-insert context in the analysis coupling the synchronic dimension (what is happening at the present) with the diachronic (what has been happening over time). At the macro level this takes the form of dealing with the extension of capitalist relations on a global scale through the diffusion of ICTs and the systematic transformation of contemporary societies into societies where information and knowledge generation and processing play an increasingly central role.

In this spirit, Beniger describes the complex, interrelated processes of change in technological, economic and organisational arrangements (technical innovations, bureaucratic changes, formation of new firms and corporate organisations) related to

the manipulation of information, originating in the mid-19th century and evolving over the 20th century. He considers these developments part of a 'Control Revolution', which uses increased amounts of information for control and has an impact on all levels of society, both material and cultural (Beniger 1986).

From a political economy approach to information and communication, Herbert Schiller stresses the structural features, such as patterns of ownership, sources of advertising revenue, etc., that lie behind media messages and constrain their content and undertakes a systemic analysis of information and communications in their general socio-economic context, which is the capitalist system. For Schiller, the information society reflects capitalist imperatives and information has become an essential ingredient of the capitalist system and the market economy, which prevail despite technological change (Schiller 1981). Information networks are in the hands of corporate media and computer giants who have the power to control content and set prices (Schiller 1996).

Multinational corporations dominate the international economy and sophisticated ICTs are deployed by them to pursue their goals, while transnational media corporations are acting as their 'ideologically supportive informational infrastructure' through the promotion of consumerist lifestyles (Schiller 1979). Information is commodified, while class inequalities determine the distribution, access to and capacity to generate information. Internet advertising, security controls, access fees, software for firewalled intranets for firms, as well as for identity verification and billing related to e-commerce, are all testimonials to the market appropriating ICTs (Mosco 1998, Sassen 2002). Moreover, they contribute to the consumption activities by exploiting the flexibilities offered by ICTs and the Internet; for Comor, ICTs have extended and deepened commodification and the market system, and the institution of consumption is a central, though understudied, cultural dimension of twenty-first century capitalism (Comor 2002), a point reminiscent of Sklair's (2000) analysis of global capitalism and the 'culture-ideology' of consumerism.

Mattelart (2003) is also sceptical vis-à-vis the dominant views of the information society as new societal arrangement brought about by ICTs and positions himself towards the continuity side of the debate; he presents a historical account of the

evolution of ideas around the information society, placing them in the rhetoric of modernisation and progress that has been present in the western world for centuries and arguing eventually that social changes that are seen as ingredients of the information age in fact 'testify to structural developments that have been underway for a very long time' (Mattelart 2003, p.161).

Webster likewise agrees that 'while there is undoubted change taking place, and this at a speed and with a reach hitherto unimaginable, it is for the most part a matter of the continuity, consolidation and extension of established relations' (Webster 2000, p.3). He thus identifies global informational capitalism as the dominant force shaping contemporary society, stressing differences of this contemporary form from corporate or laissez-faire capitalism, but still arguing that information trends have to be placed in a framework of capitalist development. For this reason, he speaks of the increasing 'informatisation' of modern society, rather than a new information society paradigm (Webster 2002).

In his own attempt to approach contemporary times, Barney views informationalism as a species of capitalism, where substance seems to be following a logic of continuity of previous capitalist arrangements, while form and praxis are changing: the former from industrial to informational, the latter from hierarchical to decentralised operations and practices (Barney 2004, Gripenberg 2006).

Ian Miles (1996) summarises the debate regarding the extent of change brought about by ICTs in terms of two extremes. On the one hand, 'continuism', i.e. the views that ICT-related change is limited on an economic and social level and that the contemporary Western society bears roughly the same qualitative characteristics as previous social formations in the 20th century, leaving the basic power structures unaltered -although social and political initiatives may bring social change. On the other hand, 'transformism', namely the set of beliefs that the information society represents a historical break with previous social organisations, changing existing power patterns and transforming social stratification with an enhanced position for information and knowledge workers and classes; in this view, ICTs are considered revolutionary technologies with potential social benefits and significant long-term effects. In between the two extremes lies what Miles calls 'structuralism', a more

synthetic view acknowledging that there are both prospects and barriers to radical social change and that the outcome is dynamically determined by actors (groups, organisations, governments or nations) and interests guiding ICTs and intervening in unequal ways. Actions and interactions between them make up a complex shaping process of many contradictory dynamics and many possible outcomes, i.e. many possible information societies.

Many thinkers have stressed that understanding ICTs calls for a departure from a purely technological interpretation and the acknowledgement of their embeddedness within different economic, political, and social orders. Sassen stresses the embeddedness and the variable outcomes of ICTs by focusing on the interactions between the digital and the material world, and the 'mediating cultures' that organise the relation between ICTs and users. She places emphasis on the embeddedness of the digital space in social structures and power relations, and the significant implications that this might have for the role and actions of the state and citizens (Sassen 2000b, Sassen 2002). Thrift approaches critically what he sees as 'an undue emphasis on information technology', not because he denies the substantial reliance of capitalist economies on ICTs, but because he thinks that 'it should be seen as having *differential* effects on numerous circuits of practice, rather than as a determining effect of its own' (2001, p.377, emphasis added). Drawing on Karl Polanyi's notion of embeddedness of economic actions in social, political and cultural institutions, Rogerson (2003) also argues that ICTs, information and its consequences have to be placed in greater contexts of social interactions and arrangements to be properly analysed and understood.

ICT developments are in general the result of complex interactions between market demands (and user involvement) and public and technology policies, in a balance that builds on existing ICT properties, but is also open to negotiation (Dutton 1996). Existing structures are of course instrumental in determining courses of action associated with ICTs and results are bound to be sealed by an intermingling of predominant cultures and institutions with the organisational modifications imposed by the new technology.

In his analysis of the work of Lewis Mumford, May (2000) claims that writings on the information society tend to be adopting either an 'enclosing' dynamic, whereby capitalism and commodification still persist and absorb any contrary tendencies, or in opposite terms, a 'disclosing' dynamic, which argues that sooner or later the potential of ICTs for democratic politics and human empowerment will overcome the enclosing tendencies inherited from the previous societal arrangements. Mumford has rather insisted that these two dynamics are not contradictory, but both are part of the unfolding of the history of society and technology. In this sense, May argues, the information society, can also be approached as evolving in ways incorporating both the two complementary, and not contradictory dynamics. Likewise, Sassen (2002) claims that these opposite dynamics can be captured by approaching the digital domain as embedded: new technologies and the Internet in particular contribute to the reproduction of existing hierarchies and functions, as well as challenge them by providing to new actors opportunities for contestation.

Echoing this point and drawing on recent changes in the broadband environment, patent law and spectrum rules, Lessig provides examples of Internet deployment whereby 'an attitude of control, perfected by an idea about property, is in tension with a system that protects a commons' (2002, p.236). Servaes tries to strike a balance between the potential offered by ICTs and the barriers to the materialisation of this potential in different contexts, as well as identifying the gap between policy-making rhetoric and socio-political reality in national, regional and global contexts (Servaes 2003, Cammaerts 2005).

2.6. Towards a continuity-change approach

From the above, one can conclude that the technologically determinist view of the information society as inescapable misses this rich articulation between the technical and the social and the ways in which they build upon each other in dialectical relationships.

Seeking to exploit the advantages and avoid the drawbacks of constructivism and at the same time overcome mechanistic evolutionism, Rammert proposes a sociological method of approaching technology and technical change, which purports to combine a

constructivist view of technology in context at the local level, combined with a 'social evolutionary' approach on the global level, which incorporates human agency and the institutionalisation of the selective structures. This approach draws from structuration theory (Giddens 1984) and treats technologies as 'technostructures', seen as socially constructed realities 'which are constituted and produced by the action of subjects ... rather than a taken-for-granted world of material objects' (Rammert 1997, p.174).

Rammert's synthetic approach enables awareness both of the macro-properties that an ensemble of technologies (in this case the ICT paradigm) can establish and the macro-circumstances (including constraints and enabling conditions) in which its advent and establishment occurs. It takes into consideration an overall social shaping of technology through social processes and actors' choices (MacKenzie and Wacjman 1985), including the role of information society policy and the mechanisms it emanates from. These advantages make it relevant for this thesis, since it opens up the possibility of approaching the information society as a balance between continuity (the pre-existing social arrangements in which the new technologies are developed and placed) and change (the modifications, transformations, and constitutions of new structures, practices and social arrangements).

Emphasising change within continuity (as opposed to change as historical and social rupture) gives the opportunity of articulating social transformations within existing historical patterns with the ultimate benefit of identifying ways in which pre-existing arrangements are modified (often quite radically, no doubt) and the new forms into which these arrangements are mutated in interaction with the spread of new ICTs.

The examination of emergent patterns of socio-technical interaction introduces the role of the context into which technologies are developed, diffused and implemented. This does not mean denying that technology is indeed 'a distinct realm of human experience that is not reducible to social or institutional relations' (Kallinikos 2002). Rather, it means avoiding attributing to technology the prime role as the motor of social change and rather investigating emergent patterns of socio-technical interaction. As May puts it, 'technology has no fixed logic, no pre-inscribed trajectory. The information age, like previous technological "ages", will not be unitary or uncontested in character; society has a profound impact on ICTs every bit as much

as they have an effect on society' (2003, p.10). Castells and Himanen (2002) likewise argue for the mutual adaptation of institutions and technology so as to create a satisfactory fit. They admit that there is no unitary and homogeneous network society, but rather different social, institutional, and cultural manifestations of it, as has been the case for the industrial society.

A continuity and change information society perspective (Feather 2000) entails a multidimensional and contextual approach to the information society, which combines the possibility for the exercise of agency through ICTs, e.g. decentralised networking by civil society agents and social movements (Sassen 2002), as well as acknowledging continuing structural features, for example unequal distribution of capabilities, power relations and the commodification of information (Cammaerts 2005, p.75).

Following the above critical views, then, we also choose to approach the information society not in terms of radical change from previous (Western) societal arrangements, but rather in terms of change within historical continuity, i.e. the extension of capitalist relations on a global scale through the diffusion of ICTs and the systematic transformation of contemporary societies into societal formations where information and knowledge generation and processing play an increasingly central role. This stance resolves the issue of continuity and change so often encountered in the literature on the information society. Instead of the rubrics of information society, post-industrialism, post-modernity, we prefer the language of informational capitalism (or perhaps of global informational capitalism), which should not be seen as a new kind of society, but rather as a reconfiguration, transformation, and re-orientation of capitalism. Having said that, as there have been variants of capitalism, depending on institutional differentiations in the economy and society (Hall and Soskice 2001), there is no single informational capitalism, but rather different arrangements and configurations of capitalism and informationalism, i.e. different types of informational capitalism.

Eventually, the 'information society' can be a useful term only to the extent that it is deployed as a paradigm for structuring discussion with the intention of identifying both continuities with pre-existing structures and societal patterns (temporal

dimension) and of pointing out variations according to social and cultural context (spatial dimension). In this sense, it makes more sense to speak of different *information societies* (Miles 1996).

2.7. The nation-state: roles and functions

The modern nation-state has been the principal form of political rule across the globe, since the seventeenth century, which marked the beginning of the contemporary international system made up of sovereign states claiming exclusive authority within their geographic boundaries (Held and McGrew 2000). The history of nation-state formation shows that it was only at that time that states began to be transformed from circumscribed and limited central apparatuses to ensembles of institutions and procedures of rule over a national territory. This process involved the imposition of a national language, the demarcation of a specific territory of rule, the unification of legal codes, the institutionalisation of practices of rule in constitutional forms, the authority to demand taxes and the monopoly of legitimate use of force over the given territory. This 'coincidence of a defined territory of rule and a project and apparatus for administering the lives and activities of those within that territory...warrants us to speak of the modern nation-state as a centralised set of institutions and personnel wielding authoritative power over a nation' (Rose and Miller 1992, p.176).[8]

Giddens differentiates between the capitalist state, i.e. the state in a capitalist society, in which there is interdependence in the division of labour, both internally and internationally, and the state in pre-capitalist or non-capitalist societies. In capitalism there is economic and technological innovation and the accumulation process is based on the mobilisation of privately-owned capital, which is not under the control of the state. At the same time, the state assumes a range of community services deriving from state revenues which depend on the activities of employers and workers. This constitutes a major contradictory element of the capitalist state.

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[8] One can for analytical reasons speak of 'the state' when referring to the structures, institutions and mechanisms of government within this territory, while using the term 'nation-state' or 'national state' when projecting the state entity to the international field and examining its position and relations with other forces, structures and entities operating beyond the boundaries of the given territory. Generally speaking, this is the convention that we follow throughout this thesis.

The state has from the beginning of capitalism played a significant role in economic activity and since the late 18th century, with the advent of industrial capitalism, it has expanded its activities as the manager of economic life. Surveillance lies at the heart of this authoritative power, since a modern state needs to have a clear picture of its people for defence or taxation purposes. During the late 19th and 20th century there was a tremendous expansion of office statistics on everything, from education to employment. Nowadays, surveillance has expanded for the purpose of developing the administrative capacity necessary to serve the citizenship rights (vote, education, welfare, services, etc.) of the citizens (Giddens 1985).

Nonetheless, surveillance is not the only dimension that defines the roles and functions of the modern nation-state. Castells, for example, analyses the state through the dynamics of domination and legitimation on the one hand and of development and redistribution on the other. Domination refers to the structural interests institutionalised in the state mechanisms (e.g. the predominance of the market in a state of neoliberal orientation); legitimation results from the capacity of the state to represent the interests of its subjects (and/or to persuade these subjects that their interests are indeed represented and satisfied). The balance between domination and legitimation ensures the stability of state institutions. In addition, as the existence of state mechanisms and of society at large depends on material resources, the state has a developmental role to play so as to increase material wealth; this has to be accompanied by redistribution of the material resources generated among different societal segments. Again, the stability of the institutions of the state is conditioned by the processes of development and redistribution (Castells 2004, pp.360-61).

Sorensen presents an ideal-typical picture of the modern state comprising the pillars of government, nationhood and the economy. Government is the centralised system of democratic rule, based on a set of administrative, policing and military organisations, sanctioned by a legal order, claiming a monopoly of the legitimate use of force, all within a defined territory'; nationhood involves 'a people within a territory making up a community of citizens (with political, social and economic rights) and a community of sentiment based on linguistic, cultural and historical bonds'; the economy refers to

a 'segregated national economy, self-sustained in the sense that it comprises the main sectors needed for its reproduction' (Sorensen 2004, p.14).

2.8. Globalisation, ICTs and the nation-state

Globalisation literature has dealt extensively over the last decade or so with the challenges facing the nation-state as a result of pressures emanating from global processes (McGrew 1995). Globalisation was induced by the national state to address its legitimacy crisis but has gone out of its control, making it increasingly dependent on financial markets, globalisation of production, trade, technology, communication and the ideological apparatus of global media (Carnoy and Castells 2001). The national state is being predominantly regarded as too small to address the global context, but also too big to tackle increasingly complex and differentiated local problems, as Daniel Bell has appositely remarked in his *The End of Ideology* (Bell 1988).

Hyperglobalists argue that the nation-state is a political entity no longer capable of addressing the challenges presented by economic globalisation. They subscribe to the view of the 'retreat of the state' from the national and international political scene (Ohmae 1990). Arguments about the impact of economic globalisation on state authority have emphasised the increasing possibilities for cross-border economic activity (owing to ICT developments, including the Internet) that escape state control and regulation. Sceptics refuse to acknowledge simplistic approaches to globalisation (which they see as ongoing a process that has been evolving for over a century) and prefer to stress the continuing significance of the state in a number of issues determining national and international politics.[9] Hirst and Thompson (1996) argue that the nation-states retain significant regulatory powers which can be used to facilitate or prohibit the movement of capital, labour, products and information.

Sorensen summarises the debate on state transformation by resorting to three basic

[9] A comprehensive literature review on the place of the nation state under conditions of globalisation would necessitate a survey of a vast literature on political globalisation and is out of the scope of this thesis. However, we touch upon the basic issues and try to link them with the challenges facing the nation-state in the information age.

schools of thought. Realist state-centric views look at the state from outside and argue that states continue to be the basic units of the international system and they set the rules for other actors, including corporations, the market, civil society, international organisations and so on. Liberals focus on individuals, companies and groups in civil society, which they see as determining what states do. They tend to underestimate the autonomous power that governments, bureaucracies and state institutions might have. For them, the retreat of the state is a positive development, as it strengthens the importance of individuals and the market economy. Finally, the critical view, involving political economists and historical sociologists, includes theorists who focus on state-market dynamics and the evolution of the state-market relationship, which they see as one of mutual dependence. These theorists tend to argue that the state faces complex processes of transformation, as will be demonstrated in chapter 3, notably through the work of Bob Jessop (Sorensen 2004).

The literature on globalisation and the place of the state is complemented by a growing body of scholarship seeking to make sense of the place of ICTs in contemporary politics, the emerging novel power arrangements in the information age and the place of the state within them.

There have indeed been extensive debates on the ways in which the ICT-enabled flows, including the Internet, challenge the notion of state boundaries and the ability of states to control such information flows. Neo-realists stress threats to national security and the formation of online communities that operate in parallel with state, while neoliberals highlight state interdependence and the possibilities for international cooperation in new governance regimes that will address the new 'space of flows'.

Steinberg and McDowell claim that trans-state information flows are not posing a qualitatively different challenge: 'Flows of various kinds across borders always have taken place, and actors in the state system have a long history of developing regimes to facilitate and regulate the movement of capital, commodities, labour and information'. In this respect, flows and states have developed in parallel and sometimes in conflict. On the other hand, however, they regard information flows as the latest expression of a broader tension in the spatial organisation of capitalism,

namely 'between capital's tendency toward mobility and its concurrent tendency toward spatial fixity' (Steinberg and McDowell 2003, p.199).

The issue of digitisation, in particular, has been time and again emphasised in recent contributions. Singh (2002) describes how digitisation has 'undone the technological logic behind separate industry types and pipelines' (p.5), meaning that through digitisation different types of media (voice, text, video and image) are all stored in digital code. This enables the horizontal integration of different information pipelines (computing, entertainment, publishing), forming information highways, where information in digitised form is exchanged through multimedia devices.

For Singh, as ICTs involve networking, i.e. communication and information exchange, they have an impact on the exercise of power and on governance at the international political level. More specifically, they have a significant impact on instrumental power (enhancing the capabilities of firms or nation-states, but also new actors, who used to be underprivileged, e.g. social movements or terrorist groups); structural power (providing the ability to transform rules and institutions); and what he calls 'meta-power' (reconfiguring, constituting or reconstituting identities of all actors involved, as well as interests and institutions) (Singh 2002).

The increasing dominance of the Internet challenges the idea of territorial space as defining security or human rights or a number of other political issues; it enables the pursuit of democratic practices and becomes a medium of non-elites to communicate across different scales, ranging from local to transnational. This is why Sassen calls for the reconceptualisation of the local as a micro-environment, which, though attached to local circumstances, is also informed by global developments and acquires through technological connections a global span (Sassen 2002). This does not mean, however, that territorial space is abolished, nor that these new spaces (and the issues framed according to them) are defined conclusively by the Internet. It is rather a matter of ICTs bringing about and becoming part of new social, political, and economic circumstances. It is important to identify these transformative and constitutive effects of ICTs, without underestimating however the imbrications between the digital and the material, which are manifested in various contexts, e.g. the spatial concentration of a variety of service professions in global cities (Sassen 2002).

2.9. Continuing importance and transformation of the nation-state

Critical approaches argue that against new structural forces (new ICTs, neo-liberal discourses, or new geopolitical configurations) and in the light of varying responses to these challenges, a general model of the national state still persists as a significant actor in global processes and their national expressions, albeit through a rearticulating of its various functions and roles (Smith, Solinger and Topik 1999; Mittelman 2000; Sklair 2000). They claim, for instance, that while there have been significant processes of liberalisation worldwide, these developments are more moves towards re-regulation and regulatory reform, rather than simple de-regulation processes (May 2002, p.133). The implications for state mechanisms seem to have included shifts to new practices, roles and functions and new areas of regulation, rather than the diminishing of state roles as such; a model of regulatory state has been proposed to account for these changes (Thatcher 2002).

The national state is considered important for global capital as it can guarantee stable economy and polity; moreover, national competitiveness is still pursued by the state so as to make the national economy attractive to foreign multinationals (which themselves rely on their home states for protection). National education and human capital policies are important in this respect for achieving productivity at the national level (Carnoy and Castells 2001).

Critical theorists do not underestimate the different circumstances in which state power operates. Goldblatt, Held et al. (1999), for instance, argue that economic globalisation does not necessarily entail a reduction of state power, but, rather, the transformation of the conditions under which state power is exercised. The example of knowledge, traditionally controlled by state apparatuses is perhaps characteristic. Carnoy and Castells (2001) claim that in the information age knowledge is central to any contemporary hegemonic project but the locus of the relation between knowledge and power has moved out of the nation-state; this is because information, knowledge and innovation operate in a global space in terms of generation, circulation, profit-making and capitalist value definition.

Critical literature has indeed been at pains to elaborate upon the transformation of the role of the state and its interactions with the global economic system (Held and McGrew 2002). Sassen (2000a) calls for the need to disentangle multiple and specific structurations of 'the global' (e.g. legislative acts or firms) inside what has been historically constructed as 'the national'. According to her, the expressions of global processes and operational rules in national institutional arrangements need to be identified. She approaches the contemporary encounter between the global and the national as one in which the state is not only resisting and declining in significance, but is also shaping, participating in and implementing the global economic arrangements, and is being reconfigured as a result. This reconfiguration involves elements of standardisation and convergence, as well as national particularities and different responses. Further, Sassen calls for the deployment of new conceptual tools to identify sub-national formations and processes as instances of global forces in operation (Sassen 1996, 2003).

Jessop (2002) argues that the national state has changed in three key respects: a) towards the denationalisation of the state, or statehood; b) towards the de-statisation of the political system and a shift from government to governance; c) towards the internationalisation of policy regimes. These are opposed by three counter-trends: a) the attempts of the national state to retain control over the articulation of different spatial scales; b) the increased role of government in meta-governance; c) the growing importance of national states in the struggle to shape the development of international policy regimes in the interests of their respective national bourgeoisies.

Even some of the sceptics acknowledge that the state's role is changing: 'The emerging forms of governance of international markets and other economic processes involve the major national governments but in a new role: states come to function less as "sovereign" entities and more as components of an international "polity"' (Hirst and Thompson 1996, p.171).

The notion of global governance is prominent in the literature on globalisation and international relations. In a global governance approach, the national government is considered a strategic site for linking together governance infrastructures and legitimising non-state regulation. These infrastructures include the supranational (e.g.

UN), the regional (e.g. EU or MERCOSUR), the transnational (e.g. civil society or business networks) and the sub-national (e.g. community associations, local governments) (Held and McGrew 2002, p.9). A basic problem with global governance is that it 'embodies a complex patchwork of overlapping jurisdictions, generating ambiguities about the principal location of authority and political responsibility' (Held and McGrew 2002, p.10). This is more so with the involvement of private or quasi-private bodies and agencies which exist alongside global public authorities (in areas as diverse as credit-rating, the setting of technical standards, or humanitarian aid).

The links between the technical and the political in the contemporary 'information age' take more specific forms in the discussions of issues of governance. ICTs are involved in the governance arrangements of specific issues and areas (e.g. the economy, security, the cultural domain and so forth); further, governance includes the governance of the new technologies themselves (governance of the telecommunications regime, or the Internet) (Rosenau and Singh 2002). Sassen, for instance, summarises the debate on Internet governance: on the one side, those who see the Internet as a single entity that can be governed and propose different forms of Internet regulation, including governance by the Internet institutions themselves, by an international organisation (e.g. ITU) or by means of an international framework convention; on the other, those who consider it a decentralised network of networks that will render external regulation ineffective and can at best be subjected to coordination of standards and rules. In between these two extremes, other approaches highlight the ways in which technology built into the Internet itself shapes some of the forms of governance and coordination through the standards and constraints built into the hardware and software, through property rights protection and through the addressing system and domain registry. In this respect, the claims that the Internet escapes state regulation appear largely unsubstantiated. Nonetheless, it should be noted that a minority of countries, notably the US, dominate the above instruments (Sassen 2000b).

2.10. The nation-state and the IS/KBE

If governance is the framework in which a 'retained' type of national state will be functioning and if this governance regime involves ICTs and the information society

at large then the extent and type of state involvement in the development and governance of the emerging information society becomes a central question for research.

Historically, the state has participated in technological development through pursuing different policies in different contexts: from state protectionism of industries, to the centrality of relevant ministries in technological development (e.g. the role of the Japanese MITI which contributed to the Japanese miracle in the post-war era), even to the adoption of market-oriented policies (Mattelart 2003). From the original innovation milieux in the US to the technological excellence centres developed in Japan, and to the research and development programmes in the EU, the state has always been present and in close collaboration with technological research and development throughout the ICT evolution. Military and economic interests forced government intervention from the early years on and governments provided funding and markets for technological projects to succeed and for a host of products to come into existence. Administration and defence have always been crucial in establishing demand patterns promoting technological innovation in information and communication (Castells 1996). Further, the state has also taken a keen interest in the development of infrastructure (railroads, postal services, telecommunications), not least for reasons of national security and the consolidation of administrative power (Singh 2002).

Still, early views on the state and the information society from a left-wing perspective hoped for a withering away of the state (the operations of which were seen as enhancing the power of capital), as information flows would create the circumstances for a more decentralised, spontaneous society, which would be less dependent on state mechanisms for its constitution. From a right-wing perspective, the information society was seen again as a hope against the strong state and as enabler of a voluntary society based on individual behaviour and interaction in a free market. Even those who did not feel so strongly against the 'strong state' argued that the state indeed could not continue to play the socio-economic role it used to play in the post-WWII period (May 2002).

In his writings in the beginning of the 1970s, Daniel Bell regarded the state as significant in providing the economic decisions, which would increasingly gain importance, as well as other governance dimensions in the oncoming information society. The information society itself would be based on the rule of the technocratic elite operating through state institutions, which would use depoliticised knowledge and planning to support an equitable society (Bell 1973).

In France, on the other hand, an influential report by Nora and Minc was arguing for a role of the state in liberating markets from the monopoly of large companies and in regulating markets so as to ensure that monopoly effects are prevented. The role of government as a service provider was stressed, as well as the anticipation that state utilisation of ICTs would have an impact on ICT diffusion in French society in general. Additionally, the report acknowledged that it was highly difficult for a government to direct ICT developments towards a particular trajectory (Nora and Minc 1980, May 2002).

Moreover, states have historically provided the legal underpinnings to societal arrangements and economic activities and this continues to be the case with the necessary legislative shifts to bring about and maintain the emerging information society arrangements: 'The argument that the state is in decline due to the emergence of the information society conveniently ignores the state's role as guarantor of the legislative infrastructure that underpins market activity' (May 2002, p.127).

As Singh (2002) argues, it was the legitimacy of powerful interests, established through state instruments that guaranteed the success of the technological order of the industrial era. However, in the information age, the state is not the only actor promoting new ICTs at the national and international level and the notion of legitimacy itself is weakened as other entities, namely international organisations and advocacy groups, are also involved in these processes. Examples in this direction are the development of technical standards promoted by the UN, the EU, or multi-national corporations and the role of NGOs and civil society in promoting networks.

From a different perspective, Barry (2001) sees a reconfiguration of the space of government due to the centrality of technology in contemporary society and

conceptualises the practice of government as operating 'not just in relation to spaces defined and demarcated by geographical or territorial boundaries but in relation to zones formed through the circulation of technical practices and devices' adopting practices 'oriented towards the problems of defending, connecting, and reconstructing such technological spaces' (Barry 2001, p.3). In this respect, the promotion of the information society through the diffusion of ICTs in the national context can be seen as a top-down attempt to 'produce' informational capitalism as a transnational 'space' that is to be governed.

For Steinberg and McDowell (2003), the emerging information society is not so much a matter of the technological imperatives of ICTs, but rather of the policies of leading states (and international institutions) seeking to reconcile capital's mobility demands (translated in the growth of the world economy through the annihilation of space), with capital's fixity requirements (resulting in increased production within state boundaries). According to them, both state and non-state institutions are constantly reconfigured by new modes and degrees of communication, without however information flows challenging the system of state and non-state entities; nonetheless, such changes lead to struggles for the design of new governance and regulatory regimes (pp.216-217).

Thus, while the state's role in technological development in the industrial era is unquestionable, in the information or network age this picture becomes more complex: 'The elegance of an order driven by the state is replaced by actor multiplicity who at times demand state intervention, sometimes run parallel to state goals, sometimes have nothing to do with the state, and at other times directly clash with the state' (Singh 2002, p.23). International organisations, NGOs, social movements, professional associations, multi-national corporations, global elites, media executives, professionals and other individuals, all are part of this multi-centric political order.

Still, Castells notes that the state plays an active role in the emerging IS/KBE: 'the role of the state, by either stalling, unleashing, or leading technological innovation, is a decisive factor in the overall process, as it expresses and organises the social and cultural forces that dominate in a given space and time' (Castells 1996, p.13). May

also argues that the state continues to be important as far as the provision of investment and resources for technological innovation are concerned, while it also acts as a rectifier of market failures (May 2002, Cammaerts 2005).

This suggests a continuing active role for the state both in regulatory, but also in developmental terms. For certain space theorists, the information society rhetoric of deregulation and limitless mobility is contradicted by policy objectives stressing the need for network infrastructures, which involves fixed investments (in the national context) and are based on the conceptual distinction between territory/fixity non-territory/mobility (Steinberg and McDowell 2003, p.199). For others, regional development is not amenable to technological solutions, but rather depends on a complex interplay of economic, social and cultural forces. Appropriate policy models may involve indigenous human resources and institutions, with technology as a constituent part: 'The role of regional information society strategies is to facilitate the emergence and development of regional learning economies and regional learning societies. ICTs have a part to play in such strategies, but only as components of broader policies' (Gibbs 2001, p.75).

Furthermore and taking into account that governments have always been and continue to be the biggest producers and users of information, it is reasonable to assume that the public sector (including public bureaucracies) could potentially function as the engine of ICT diffusion and the generation of demand in the relevant national IT market. The fashionable discussion on eGovernment is not only about providing better services to the citizen and potentially redefining the state/economy/society relation, but also involves economic aspects of technology diffusion and public procurement (Heeks 1999).

The developmental dimensions of the role of the state extend to its role in welfare, which is in itself under the process of redefinition under the information society arrangements. As new risks and needs emerge and are spread unequally in a national population, and as the information society entails a significant place for human capital because of the increasing presence of information and knowledge functions, the state, operating in a global governance framework, is expected to retain (at least in certain national cases) tools and procedures to involve citizens in the employment and social

life aspects of the information age.

A significant dimension of the role of the state is the drawing or redrawing of private/public boundaries in the context of knowledge. Drawing on Poulantzas, Carnoy and Castells (2001) emphasise the importance of (scientific) knowledge as well as the importance of the state in the generation of new knowledge and its ways of use in the society.

The role of the state in defining, distributing and deploying knowledge to shape power relations is, nonetheless, changing. The state's presence in the largely public educational system deserve particular emphasis: on the one hand, the state-financed educational system continues to dominate the educational process, hence the transmission of knowledge to the young; however, under conditions of globalisation, it is global markets and not national markets and moral values, that determine the kind of knowledge transmitted in the national educational system. As a result, the nation-state changes from having the monopoly of knowledge to becoming a major actor in the production and communication of knowledge for the global system. Through knowledge management, the state both attracts legitimacy and integrates the national economic and political space to the global economy (e.g. providing skills to its workforce to make it attractive for global capital investment (Carnoy and Castells 2001, pp.11-12).

Garnham has emphasised the inherent contradiction of knowledge, the creation of which demands monopoly rights for authors, while its social productivity is 'enhanced by the free flow of that knowledge unencumbered by copyright and other related barriers to its use and exploitation' (Garnham 2000, p.147). Rogerson also exposes the tension between the tendency of information to be free-flowing and the attempts to appropriate it and turn it into a commodity. Following Polanyi and his industrial revolution account, Rogerson advocates state intervention: 'If the nature of information is to flow, then the Polanyi response would be that it should flow for the public good and that government *should* be actively involved in providing that space for it to flow. This involvement ... must be at the nexus of technological-societal-political-economic relations' (2003, p.120, italics in the original). The trajectory of

this intervention, however, varies according to the type of government and the state of technological advancement in a country.

Webster has pointed out some of the ways information is increasingly being treated as a commodity and as a proprietary good: publishers' attempts to enforce copyright terms on photocopies, university ownership of educational materials and online access to publications, ownership rights on patents, or television shifting from a public broadcasting medium to a commercial entity (deploying advanced ICTs as in the case of digital TV) providing information and entertainment services at a profit (subscriptions or profit through advertising) and without much concern about educating or provoking thought in the public (Webster 2000).

Due to the centrality of knowledge in the information age, the new legal configurations that states are called upon to guarantee are the various intellectual property rights regimes that have become increasingly salient. Paradoxically, although the private sector has been calling for less state authority, in the area of intellectual property extended legal activities of the states have been demanded. Evidence of this trend has come from multinational firms for the protection of intellectual property by states, as expressed in the agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs), which has been part of the WTO (May 2002).

Based on and culminating the above discussion, the following functions of the national state vis-à-vis the IS/KBE project and its implementation can be identified:

- make the necessary structural adjustments in the economy and the society
- introduce and supervise appropriate regulation for a fair operation of market forces
- invest in productive and human resources and in activities that are socially beneficial (though not always profitable)
- increase awareness by presenting the information society project as a developmental goal and a socially desirable evolution
- ensure universal access to new technologies (including universal availability of infrastructures) and prevent new processes of exclusion in the information society

- deploy ICTs to provide better public services and reinforce and upgrade education, health and welfare services, the environment and transport
- protect the rights of citizens in the digital age, including privacy, security and personal freedom
- maintain desirable social and cultural national characteristics by articulating international imperatives with the national context

In recapitulation, the informational capitalist economy leaves a special place for political processes deriving from and being associated with the state in what concerns the assimilation of new technological developments, the necessary institutional and social restructuring and the pursuit of the wealth of a nation in a globalised competitive economy.

2.11. Conclusions

The concept of the information society (IS) has often been approached theoretically and deployed in policy circles as a signifier of radical social change and departure from previous societal arrangements. The debate around the information society has been, generally speaking, structured around two broad groups of approaches to current social transformations. Both groups have the increasing presence and the transformative effects of information and communication technologies (ICTs) at their core of the theorisations, but they differ as to the extent to which the emerging dominant societal arrangements constitute a radical break with previous ones. In this respect, the former speak of the information society as a new type of society, while the latter prefer to identify continuities with industrial capitalist societies and place ICTs in context, trying to identify the profound transformations deriving from the articulation between new technologies and pre-existing economic, social, political, cultural patterns.

Following the more critical scholars, we retain that, while it is important to identify the unquestionable changes following the pervasive character of ICTs in the contemporary world, it is equally significant to place them in their social and historical context. On the one hand, this calls for historical sociology so as to identify

the long-term patterns of continuity and change (Webster 2005). In parallel, however, the research task becomes how we can 'develop relatively enduring sociological insights into *informational capitalism* within socio-cultural and technological contexts that it (information capitalism) generates' (Burrows 2005, p.467, italics in the original). This approach serves to highlight how particular social circumstances, both at the micro- and at the macro-level, operate in dynamic relations with the new technologies. As a concept, the 'information society' seems to have only limited value, as it seems to ignore both the capitalist frameworks into which it emerges and its rich social, political, institutional and cultural variations.

Historically, the nation-state has been associated firstly with the security of the community defined by its borders and secondly with creating the conditions for economic and social reproduction. This involves guaranteeing property rights, developing legal and monetary systems; regulating the economy and ensuring the availability of labour force; providing infrastructures (water, roads, railways, electricity, etc.); caring for those at a disadvantage or in need through social policies. As Perrons notes, there is a tension between capitalist accumulation and social sustainability, the resulting balance depending on power differentials between classes and social groups in different countries (Perrons 2004).

Far from sidelined, the nation-state retains significant capacities that make it indispensable in the context of globalisation and the information society. The challenges it faces, nonetheless, have necessitated a re-alignment of its functions and roles in the economy and society. Further, it has witnessed a rescaling of its operations, its legitimacy and its accountability in a context of global governance arrangements.

These developments suggest a problem of detachment of the national state from the national society: 'In seeking to promote or regulate the forces of globalisation, states have created new suprastate layers of political authority which have weak democratic credentials and stand in an ambiguous relationship to existing systems of national accountability' (Held and McGrew 2002, p.14). But, it might also be the case that 'the central functions of the nation state-state will become those of providing legitimacy

for and ensuring the accountability of supra-national and subnational governance mechanisms' (Hirst and Thompson 1996, p.171).

Moreover, while it is true that state protectionism happens to be in decline in favour of free trade (including e-commerce which increasingly happens over the Internet and surpasses nation-state regulations), in the case of the information society there are new legal challenges to be undertaken and legal arrangements to be implemented by the state. In addition, as the information age has involved the commodification of forms of knowledge that used to be public, states will continue to be involved in the resolution of the contradictory character of knowledge, i.e. intellectual property vs. public good (Jessop 2000). Further, development in the information age is very much linked with technological and educational policies, pursued by the state with the intention of enhancing 'endowment in informational production factors' (Castells 1996, p.90).

A question that emerges is the mix in state functions of elements of competition with regulatory and developmental aspects. The answer might depend both on the particular global arrangements of the state and on the national context in question, its imperatives, its tradition and its current needs; we further pursue this question in the following chapter which lays out the conceptual and methodological elements the thesis is based upon. In this, we will draw on a theory which conceptualises the relationship between (an ideal type of) the contemporary capitalist state and the IS/KBE. Departing from it, however, we will introduce elements from literature that could be deployed to theorise the possibility of national variations of the IS/KBE paradigm, as well as the role of the state in the process of IS/KBE development.

CHAPTER 3: CONCEPTUAL AND METHODOLOGICAL APPROACH

3.1. Introduction

In chapter 2 we departed from the extreme views of both the hyperglobalists, who see the national state as irrelevant and powerless in a 'borderless world' (Ohmae 1990) and of the sceptics who argue that globalisation is not new in any significant way and as a result its effects on the functions of the nation-state cannot be taken as substantial (Hirst and Thompson 1996). Our interest lies in more critical positions: some identify noteworthy changes in the state's forms and functions, as well as emphasise its overall continuing significance (Smith, Solinger et al. 1999); others stress its active role both in terms of social reproduction in the national context (Perrons 2004) and as player together with non-state actors in the international arena (Held and McGrew 2002).

In parallel, chapter 2 discussed the information society (IS) and the knowledge-based economy (KBE), both as a contemporary social transformation taking place in the developed world (and increasingly in semi-peripheral contexts), as well as a grand sociological concept (Castells 1996; May 2002; Webster 2006).

Following the lines adopted in the literature review, our intention is to maintain a balance between social continuity and social change. On the one hand, the state has been approached as a continuingly significant, albeit changing, entity under conditions of globalisation. On the other, the IS/KBE paradigm, has been examined as a broad set of socio-economic transformations placed in historical continuity, including both the emergence of post-Fordist discourses of competitiveness and the active pursuit of policies to promote IS/KBE in a context of globalisation (Mattelart 2002).

Balancing change and continuity informs a methodological approach that can address the IS/KBE at the national level by examining: a) the role of the state and the ways in which its forms and functions are transformed with regard to the emergence of the IS/KBE paradigm; b) the extent to which there are significant national variations (and national continuities) within the overarching techno-economic IS/KBE paradigm, as

well as the ways in which these are manifested and can be identified and studied. This in turn could open up a research agenda to address the hitherto limited treatment of the state/IS relationship within the national frame of reference.

To approach the above two questions we deploy a conceptual framework made up of the following two components.

a) Drawing on work by Bob Jessop (Jessop 2002, 2005): a high-level analytical approach to the KBE which regards it as a dominant, overarching, hegemonic vision in the context of a broader post-Fordist paradigm and combines it explicitly with a transformed role for the nation-state directly linked with the promotion of the KBE. [10]

b) Drawing on comparative political economy and Weberian historical sociology: a more empirically grounded second pillar which seeks to address the issue of capitalist diversity at the national level within the IS/KBE paradigm. This involves the deployment of a state/society (or state/economy/civil society) framework of analysis in order to examine the social, economic, political, cultural characteristics present at a certain national level in the Fordist era that are replicated or in any case interact with the IS/KBE paradigm at the national level.

This conceptual framework is deployed to address the argument of the thesis:
The development of a national IS/KBE entails processes of translation of international policy directions into strategies and practices informed by the national, historically formed state/society relation, while the state is instrumental in articulating these policies with the path dependency of existing national arrangements.

[10] Jessop's analysis focuses on the KBE, but since he also takes into account social aspects we regard it as applicable to the IS /KBE paradigm.

3.2. Conceptual component 1: the state and the IS/KBE vision

The work of Bob Jessop is one of the very few attempts to capture the complex relation between the state and the knowledge-based economy, as well as the historically continuities but also contingencies and discontinuities of the latter. We draw on a variety of his contributions for the first pillar of our conceptual framework.

3.2.1. Theorising the state

In a number of recent papers and in his major work *The Future of the Capitalist State* (2002), Jessop develops a theory of the capitalist economy and society, as well as a theory of the state within it. His starting point is the work of the French Regulation school, according to which capitalist economies do not result merely from the operation of market mechanisms, but are rather socially embedded and regulated (Boyer 1990; Lipietz 1993). According to Regulation theorists, specific forms of capitalism are made up of a regime of accumulation and a mode of regulation, which involves 'an ensemble of socially embedded, socially regularised and strategically selective institutions, organisations, social forces and actions organised around (or at least involved in) the expanded reproduction of capital as a social relation' (Jessop 2002, p.5).

For Jessop, the core of the state apparatus is a distinct ensemble of institutions and organisations whose function is to define and enforce collectively binding decisions on a given population in the name of their "common interest" or "general will". This definition views the state as a macro-political organisation with a specific orientation, while indicating that there are important links between the state and the political sphere and the wider society. His *strategic-relational* approach to the state, inspired by Poulantzas and Gramsci, is summarised as follows: a) there are various institutions and organisations linked with the core apparatus in uncertain ways and states are never clearly separated from society and societal practices; b) the nature of these organisations, their links with the core apparatus, as well as the connections between state and society depend on the nature and history of the social formation; c) the forms in which the legitimacy of the state is expressed also vary and its political functions

are constituted through relevant political discourses; d) the state possesses a range of means of intervention, capacities and limitations, which carry different relative weight in different contexts; e) the boundaries and identity of the society in question are often constituted through the same processes by which states are built; f) the "common interest" and "general will" are constructed concepts concealing different articulation and aggregation of interests and values (Jessop 2007, pp. 9-11).

3.2.2. From Keynesianism to Schumpeterianism

Along these lines, Jessop uses his strategic-relational approach to argue that the various forms of post-WWII welfare capitalism and the social democratic political regimes in Europe were part of the Fordist regime of accumulation. This was established in Western Europe, North America and Australia roughly in the period 1945-1975 and was essentially a paradigm based on industrial mass production and mass consumption coupled with a mode of socio-economic regulation which took place within the national frame (comprising the national economy, national state, national citizenship and national society). Fordism went hand in hand with an ideal type of statehood, which Jessop calls 'Keynesian Welfare National State'. [11]

Jessop identifies a contemporary economic and social transformation towards a new, post-Fordist accumulation regime, which emerged in the 1990s (after neo-liberal attempts to roll back the state in the 1980s) through political strategies (neo-liberal, neo-statist and neo-corporatist). The outcome is the establishment of a 'Schumpeterian Workfare Postnational Regime', which is accompanied by a new form of statehood, namely the "Schumpeterian competition state".

These strategies were pursued in the wake of the crisis of Fordism from, roughly, the mid-1970s. This was related to the exhaustion of the growth potential of mass

[11] Keynesian, because it used demand management policies and provision of national infrastructures to govern the national economy and to secure full employment and economic growth; welfare, because it pursued social policies aiming at extending welfare rights; national, because its frame and scope was defined by the boundaries of the nation and the economic and social policies adopted were addressing the historically formed national frame (national economy, national society comprising the citizens of the nation); and, last but not least, statist, as state institutions were the agencies that held market forces under check to ensure economic growth and social integration (Jessop 2002).

production, the saturation of markets for mass consumption, the internationalisation and globalisation of production (together with the evolution of new ICTs), the inflationary impact of the Keynesian state and the growing fiscal crisis, the social security crisis emanating from part-time and temporary forms of employment (Jessop 2002). They were also informed by political rhetoric, including: a) the discourse on state and government failures, which emanated from both the right (problems of public sector inefficiencies) and the left (failure of the welfare state to provide adequate redistribution); b) the 'crisis of legitimation' discourse, which involved both neo-liberal criticism as to the inefficiencies of bureaucracy and leftist arguments regarding the disempowering effects of bureaucracy; c) the 'fiscal crisis' discourse, which involved public debt and pressures from the ageing of the population (Torfing 1999).

The emerging, post-Fordist accumulation regime is supposed to provide answers to the above crises through a number of strategies: a) the transformation of mass production; b) the opening of new markets and provision of new profit opportunities; c) the decreasing reliance on national demand conditions and the emphasis on national and regional innovation systems; d) the adoption of supply-side policies seeking to boost innovation; e) the management of a more cost-effective social consumption; f) the increasing recognition of international competition and new structural and systemic imperatives; g) the rejuvenation of business (including new industrial sectors and the exploitation of a flexible labour force); h) the adjustment of social reproduction (including social policies and welfare) to the new conditions of internationalisation, marketisation and flexibility (Jessop 2002).

3.2.3. The Schumpeterian Workfare Postnational Regime

The Schumpeterian regime appears as a promising response to the Fordist crisis and can be described in its ideal type along the following lines (Jessop 2002, 2005):

a) In terms of capital accumulation, it is Schumpeterian, as it promotes innovation and flexibility in open economies by supply-side interventions to achieve structural and systemic competitiveness; the knowledge-based economy is the central concept informing accumulation strategies and the Schumpeterian competition state plays a

major role 'in the material and discursive constitution of the globalising, networked, knowledge-based economy that its activities are seeking to govern' (Jessop 2002, p.95).

b) In terms of reproduction of labour power, it is workfare, as it seeks to accommodate the demands for labour market flexibility and economic competitiveness in the globalising knowledge-based economy. To this end, it exerts downward pressures on wages and relegates social policy and social spending to a secondary position, as well as invests in education and training to create an autonomous and flexible workforce with emphasis on knowledge skills, entrepreneurship and lifelong learning.

c) In terms of the spatial and temporal scales involved in its activities, it is postnational, as the national scale has become less important in what concerns economic and social policies, which are increasingly managed by new multilevel governance regimes. This relativisation of scale might involve international organisations, intergovernmental fora, arrangements such as the EU and its relevant imposition of norms and regulations or the devolution of social and economic policy to regional urban and local actors and institutions, though the national retains a significant role in all of the above.

d) In terms of the mode of government and policy-making, it is a regime, in the sense that a number of policies are administered by non-state mechanisms and actors with the intention of rectifying both market failures but also the weaknesses of statism. These include public-private partnerships organised at different levels, from the local to the supranational, neo-corporatist arrangements, as well as networking and other forms of self-organisation, which convey more of a picture of governance, as opposed to traditional government.

3.2.4. The Knowledge-Based Economy

A core element of the post-Fordist accumulation regime, according to Jessop, is the knowledge-based economy (KBE); this can be defined as one where knowledge is being created, diffused and deployed in accelerated ways through ICTs; where increasingly sophisticated products codify and manage knowledge; and where there is a perception of knowledge as a strategic asset for individuals, firms and nations. In the same vein, one can speak of 'knowledge policies', namely policies regarding: knowledge creation (supporting basic and applied research, the culture industries,

promoting interchanges between different cultures and groups); knowledge diffusion (promoting broadband networks, Internet access, content industries, education reforms); knowledge utilisation (supporting product and process innovation, knowledge management and learning in firms and public organisations, international partnerships for innovation) (Rodrigues 2003).

In Jessop's own words, 'the KBE seems to have become a master economic narrative in many accumulation strategies, state projects and hegemonic visions and has steadily acquired through the 1990s a key role in guiding and reinforcing activities that may consolidate a relatively stable post-Fordist accumulation regime and its mode of regulation' (2005, p.152). He views the knowledge-based economy as a dominant, albeit heterogeneous, hegemonic paradigm and strategic guide for economic, political and social restructuring, owing to the importance attributed to knowledge in the post-Fordist socio-economic regime.

Jessop draws on Gramsci (Gramsci 1971) in his theorisation of a new accumulation regime based on the knowledge-based economy, the emergence and consolidation of which 'depends critically on the exercise of political, intellectual, and moral leadership and its translation into the reorganisation of an entire social formation' (Jessop 2005, p.151). Part of the process has been the development of a new economic imaginary which is instrumental in the restructuring of economic and political institutions and practices. The forces involved in its development are organised interests (e.g. professional associations, industrial lobbies), political parties, social movements and the mass media.

This new economic imaginary around the knowledge-based economy has been capable of informing economic strategies, state projects and political visions and agendas, as well as processes of socialisation. It has been deployed as a vehicle for managing social and political uncertainty and to connect private, institutional and wider economic and social concerns. It has also been translated and articulated along: a) scale (from the global to the local) b) organisational and institutional sites (from firms to states) c) functional systems (education, science, health, welfare, law) d)

spheres of activity (public sphere, politics and civil society). This translation of the general ideas has given rise to many smaller visions and strategies. [12]

Jessop is keen to emphasise that the knowledge-based economy has been selected among many possible discourses informing a possible landscape under post-Fordism; moreover, he traces the ideological roots of this master discourse in the early debates on post-industrialism, while he attributes its momentum to the efforts of US capital and the US state during the 1980s to respond to what was seen as growing competitiveness of Europe and East Asia. Through a number of multilateral agreements and dissemination of US standards and norms (e.g. the promotion of the Trade-Related Aspects of Intellectual Property Rights agreement in the WTO) the base of economic competitiveness was established around intellectual property rights regimes. Efforts to safeguard US capital continued until the knowledge-based economy discourse became dominant and other states were called upon to adopt it. Subsequently, the master discourse was appropriated and supported by political entities, from international organisations (OECD, WTO, IMF, World Bank) and regional blocs (NAFTA, Mercosur, EU), down to nation-states, metropolitan areas and small cities (Jessop 2005).

[12] In the area of science and technology, strategies about smart machines and intelligent products and information-intensive innovation processes have been developed. In the economy, emphasis has been given on the development of knowledge-based firms and provision of knowledge-intensive services (e.g. consultancies of various kinds), as well as an overall articulation of the learning economy as a new paradigm for competitiveness and growth. In the areas of capital and labour, a plethora of conceptualisations of knowledge, informational, digital and virtual capital and capitalism, as well as the terminology of knowledge workers and teleworking have been promoted. In education, discourses around the learning society and lifelong learning have been articulated. In culture, the development of cultural and creative industries has been supported. In law, debates on the nature of property in knowledge and the intellectual property rights have been ongoing. In the state/government/politics domain, conceptualisations of the virtual state, the network state, e-government, e-democracy, cyberpolitics and cyberactivism have come about. In warfare, a variety of versions of smart weapons and virtual warfare have been invented. In terms of space, the importance of learning regions and innovative milieux, the informational, digital and global city, cyberspace etc. has been highlighted. Last, in socialisation at large, debates and political and social mobilisations regarding the information society, surveillance, virtual and cyber-communities, access, and the digital divide have been conducted (expanded from Jessop 2005, table 7.1).

3.2.5. Functions of the state in the knowledge-based economy

The post-Fordist paradigm and the knowledge-based economy have major repercussions on the role of the state and politics in helping secure some of the conditions for profitable accumulation, the reproduction of labour power, the management of the spatial and temporal horizons of capital accumulation, as well as on the relationship between government, governance and meta-governance (Jessop 2000).

Jessop identifies changes in economic discourse related to the reorientation of the contemporary nation-state. These are as follows:

a) shift of emphasis from traditional goals such as 'productivity' and 'planning' to 'flexibility'
b) shift from stable full employment to lifelong learning to ensure flexibility
c) the discourse of globalisation as a new phase of capital accumulation
d) emphasis on knowledge as an engine for growth in the new economy
e) shift from monetarism to the 'new growth theory', which stresses the benefits of state intervention to create conditions favourable to economic growth

All these changes have modified the discourse of competitiveness: 'The articulation of these and related discursive-strategic shifts into new accumulation strategies, state projects and hegemonic projects, and their capacity to mobilise support are shaping the restructuring and reorientation of the contemporary state and helping to produce new regulatory regimes' (2002, p.133). The conceptualisation of the state in Jessop's model includes elements of what has been termed the 'regulatory state', whose functions are orientated towards the production of economic and social order within a globalised economy. In particular, this model shifts the function of the state from the direct allocation of social and material goods and resources to the provision of regulatory frameworks and agencies for the correction of market failure within the economic order (Jayasuriya 2005, Majone 1996).

As mentioned in chapter 2, new growth trajectories have historically relied on increased state direction for management of a socio-economic transition (Perrons 2004). The Schumpeterian competition state plays a significant role both in the

realisation (in material and discursive terms) of the globalised knowledge-based economy, as well as in its governance. Despite the predominance of the economic in the post-Fordist paradigm, these governance functions that the state is called upon to undertake are not only economic, but essentially involve the socio-political sphere in the light of new problems of social cohesion and social conflict as they appear in the transition to the IS/KBE (Jessop 2005).

As knowledge is central in the IS/KBE, states are keen to promote its production and diffusion, and to exploit and expand the provision of intellectual resources. In addition, knowledge management becomes a significant function in governance processes. This involves the management of the idiosyncratic and contradictory character of information/knowledge, which can be taken as both a factor of production and as a public good: intellectual property is the key source of profit in the IS/KBE, but the production of knowledge is dependent on the intellectual commons, the social basis and the public availability of knowledge (Jessop 2000). This contradiction has been previously acknowledged and the need for states to design knowledge investment policies to benefit society has been emphasised (e.g. Bell 1979).

States are therefore called upon to promote the commodification of knowledge (through patents, copyright, licenses) so as to turn it into a source for profit, but also to guarantee an intellectual commons basis for achieving competitive advantage of the economy on the whole and for building social capital and the learning society. It is in this vein that some or all of the following functions of the state can be understood: development of infrastructures (including broadband), content and services for the IS/KBE, governance of activity in cyberspace, transformation of national utility structures to more flexible and competitive arrangements, links between university research and business needs, provision of platforms for education, lifelong learning and knowledge skills (Jessop 2005). Moreover, states assume discursive functions related to the promotion of the IS/KBE as 'imagined community' (Anderson 1991) through advertising campaigns and other rhetorical means.

Different states assume different knowledge management policies, others promoting intellectual property and knowledge privatisation, others seeking to preserve (and enhance) intellectual commons and knowledge-sharing with the intention of

protecting social capital embedded in communities by promoting innovation and designing apposite institutions (Jessop 2000). This suggests that within the Schumpeterian regime and the regulatory state model there are certain degrees of differentiation. The extent as well as the type of state intervention in the IS/KBE is a significant object of study; for instance, in certain national contexts the state might assume merely a competitive or a regulatory role, while in others it might intervene in more developmental ways. A crucial parameter in this differentiation is the effectiveness of state governance of the IS/KBE in the national context, which can be evaluated by using the concepts of embedded autonomy and capacity of the state in question (to be discussed in the next section).

Further, it is reasonable to expect that differentiations or variations in the role and functions of the state will have an impact on the process of transition, as well as the eventual physiognomy of the IS/KBE at a local and national level. While Jessop's analytical IS/KBE framework captures adequately long-term developments in the international political economy, it cannot observe and capture the national *empirical outcomes* of the project it purports to describe at a high level. It is expected that these will be differentiated and this divergence can manifest itself across diverse levels and in various ways, according to aspirations of different actors involved and the perceptions of the population, pre-existing national socio-political circumstances, institutional traditions, conflicts, politics, tensions in implementation, interaction between market demands and public policies.

Jessop acknowledges the variable positioning of different states as far as the information society project is concerned, as well as the different institutional arrangements in which the IS/KBE project is encased. He recommends empirically informed research, which would unravel in a national context the structural coupling between each type of Fordism and the character of the national state, the complexities of the capital relation, the implications for the forms of economic and political struggle to resolve the crisis, the problems occurring when the state does not have the capacity to manage the transition (2002, p.139).

Our interest in the national aspects of the IS/KBE project, together with the role of the state in the process of IS/KBE development, necessitates a conceptualisation of the

national context, its particularities and its articulation with the IS/KBE international or global vision, captured by the high level analytical framework of Jessop. We now turn to our second conceptual component, which is intended to bring the issue of capitalist diversity and national variations into the picture.

3.3. Conceptual component 2: national variations of the IS/KBE paradigm

State and society debates in political economy have arguably been fragmented between the fields of comparative and international political economy. The former, at least in older approaches, has ruled out the structural context of global processes into which states operate and has followed a simplistic state-centrist approach, while the latter has evolved around the notion of 'convergence' and homogenisation resulting from globalisation. This fragmentation, it has been suggested, has substantially limited the study of states and societies, as well as the processes of state transformation in the contemporary (global) political economy, failing to address the nature of contemporary states in conjunction with the structural context in which they are rooted. Recent work in political economy has sought to address the evolution of national economies and societies under the influence of global forces by keeping a balance between the persistence of national characteristics and the ways in which these are transformed under conditions of globalisation (Phillips 2005).

3.3.1. Conceptualising capitalist diversity at the national level

The issue of national variations within general historical macro-tendencies has been quite prominently addressed by sociological theory in the last decades (e.g. Mann 1986, Moore 1966). Likewise, in political economy, neo-institutionalist accounts have pointed to capitalist differentiations at the national level (often presented in terms of clusters of nations around a few ideal-types). We will also draw on these approaches, which we see not only as compatible with Jessop's framework, but also complementary as they are informed by a lower level of abstraction and are more rooted in empirical reality. They are compatible, firstly because they support Jessop's overall belief that the structural tensions of capitalism and encased in different institutional arrangements in different spatio-temporal contexts (Jessop 2002). Secondly, because they highlight differentiations in the (Keynesian welfare) state in

relation with the historical differences between national societies without compromising a set of basic features that legitimise the study of the Keynesian state as a high level analytical model (Pop and Vanhuysse 2004).

Neo-institutionalist accounts have originally conceptualised capitalist diversity by means of a dichotomy. Michel Albert identifies two types of capitalism, namely the free market type of the Anglophone countries and the Rhenish model (Germany, the Netherlands, Switzerland, France, Scandinavia), the division based on the capacity to make long-term decisions that maximise individual or collective goods (Albert 1991).

In their influential work *Varieties of Capitalism*, Hall and Soskice promote an actor-centred institutional approach which takes national-level institutional specificities as given and accentuated under globalisation. This approach is a recent comparative perspective on the national political economy, which offers an account of how the national institutions confer comparative advantage, especially in the sphere of innovation (Hall and Soskice 2001).

Hall and Soskice's approach is influenced by Albert. It is also a dualist perspective which specifies on the one hand a model of liberal market economy (LME) associated with neoliberal policies, radical innovation and new economic sectors and on the other a type of coordinated market economy (CME), in which social and political institutions participate in economic policy and which is characterised by social democracy, incremental innovation and traditional economic sectors. The former type includes the Anglophone countries (US, Canada, Australia, New Zealand, Ireland and the UK), while the latter clusters together Germany and the Scandinavian countries (but also includes the Netherlands, Belgium, Switzerland, Austria, Japan and Korea). Hall and Soskice's framework suffers from rigidity, in that it does not account for cases combining characteristics from both types, e.g. CMEs carrying out radical innovation in new technological sectors (e.g. telecoms in Finland). Its importance for this thesis, however, lies in their conceptualisation is that they identify a so-called 'southern European group', including France, Italy, Spain, Portugal, Turkey and Greece, which comprise a state-led and post-agrarian type, and which are treated at

times as CMEs and at times as economies in between CMEs and LMEs (Crouch 2005). [13]

A seminal contribution regarding capitalist diversity that has gone beyond dichotomies has been G. Esping-Andersen's (1990) path-breaking work on the typologies of welfare states in capitalist societies. Esping-Andersen's analysis is useful for us because he deploys the notion of 'regime', as opposed to 'type', in order to denote the complex articulation between the state and the economy.[14] Significantly, his analysis has given rise to further research on national regimes but has also attracted criticism for not including south European welfare states (with the exception of Italy), which are seen as presenting their own idiosyncrasies.

To address this omission, Leibfried (1993) developed a further typology, according to which these states form a fourth cluster, namely the 'Latin Rim' regimes, which are based on older religious welfare traditions and on the family and informal mechanisms for welfare provision (Bonoli 1997). These have developed in national contexts (notably in south Europe) that still depend highly on agriculture and feature large informal economies and on socio-political organisations in which allocation of resources is dominated by clientelistic relations, which distribute favourably to particular groups at the expense of others (Rhodes, 1997).

In a similar vein, Richard Whitley has differentiated national capitalisms in accordance with type of business system (he identifies six: fragmented, coordinated industrial district, compartmentalised, state-organised, collaborative, highly

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[13] This is a first step towards surpassing dichotomies in neo-institutionalism; a step which indeed has been taken more elaborately by other theorists such as Vivien Schmidt who describes three types of European capitalism: the 'market' type which is equivalent with the LME, the 'managed' type, where economic actors cooperate in an environment guided by an enabling state, a model similar to the CME, and the 'state' type, which is characterised by significant state intervention in the economy. Schmidt also argues significantly that being confronted by new challenges of globalisation, states react in different ways and produce new forms of diversity (Schmidt 2002).

[14] Esping-Andersen distinguishes between three such regimes:
a) the 'Corporatist/Conservative' Regime, includes states with corporatist traditions, such as Austria, Germany, France and Italy; b) the 'Social Democratic' Regime, in which social democracy has been the driving force, e.g. Sweden and Norway; c) the 'Liberal' Regime, in which the logic of the market prevails, typical examples falling in this regime are the US, Australia, and Canada (Esping-Andersen 1990).

coordinated), type of firm, as well as links of them with the state financial system, skill development, trust and authority relations (Whitley 1999). Other approaches have included Bruno Amable's quantitative method using data on product and labour markets, social protection and financial systems to come up with five groups of countries, namely market-based (Anglophone), social democratic (Nordic), Asian (Japan and Korea), Mediterranean (south European) and continental European (Amable 2003).

Some of the above categorisations are undoubtedly mechanistic and cannot capture the complexity of capitalism at the national level. Useful as they may be, the ideal types (models, clusters, etc.) described above should not be treated as a panacea. Models are only tools to make the study of a national case easier and are not set in stone. Methodologically, national empirical cases should be seen as an eclectic and constantly changing constellation of features, rather than being forced into a straitjacket of one or the other model.

We indeed expect the delimitations of the various types of postwar welfare capitalism that helped identify the models outlined above to be more and more blurred in the IS/KBE. Consequently, drawing on ideal-types, but at the same time surpassing them, might be a more fruitful way to capture the balance between historical continuity and historical change regarding the information society project in a national context. Still, capitalist diversity can lend support to the argument that different national characteristics in the industrial era are expected to give rise to diverse forms of information societies. This is due to the anticipated persistence of at least some of the initial different characteristics (albeit transformed) and to a certain degree of replication of structures and institutional features that were present during the Fordist paradigm.

The capitalist diversity discussion is useful in initially positioning the Greek case in the south European type of capitalism with certain distinct characteristics: a large informal economy, the centrality of clientelism and patronage systems, an extensive reliance on agriculture with incomplete industrialisation and a significant share of small family firms, as well as a low level of welfare provision. These features are important and useful in the study of IS/KBE in Greece. Although the mechanistic

logic of models and clusters should be treated with caution, such features can be used as signposts of the interaction between prior social arrangements and new policy imperatives. Since capitalist diversity rests historically on the characteristics of the national society, the national state and, broadly, the particular relations between them, we argue that a conceptualisation of the national variations of the information society ultimately calls for a more profound state/society socio-historical approach. This will provide a non-mechanistic perspective highlighting capitalist diversities at the national level and would also complement Jessop's framework, which captures developments in international political economy.

3.3.2. The state/society socio-historical approach

The value of a state/society approach is related to alerting the researcher to the historical unfolding of a national economy/society relation (and inescapably the role and evolution of the specific national state in this process). As such, it prepares the ground for an adequate comprehension of the outcomes of what has been operating as the IS/KBE vision and project at the international level by considering pre-existing historically formed (at the national level) economic arrangements, social relations, cultural characteristics, institutional traditions, together with the role of the particular state in the socio-economic development of the national context in question. By doing so, however, it does not rule out the (global) structural context in which such national variations are placed, which is indeed captured by the IS/KBE framework. The ultimate goal in using this approach is to argue that the impact of IS/KBE global processes will depend on the nature of the society and the state (seen through the state/society relation) under examination. The state/society perspective is compatible with Jessop's strategic/relational approach to the state (outlined in page 65), which also attends to the connections between state and society.

Comparative political economy and political sociology have been preoccupied with state/society debates at least since the 1970s, when demands to 'bring the state back in' were responding to 'society-centred' approaches which were seen as attributing to the state a secondary position in terms of analytical importance (Phillips 2005). Marxist theory was criticised for economic reductionism, which stressed the importance of the economy and the class struggle, pluralism was criticised for

underestimating the interests of state managers in accounts of interest groups competing for state power, while structural functionalism was seen as subsuming the development and operation of state mechanisms to the imperatives of societal structures (Jessop 2001). The ensuing state-centric theories were preoccupied with the notion of 'state autonomy', which at the first instance meant the ability of states 'to formulate and pursue goals that are not simply reflective of the demands or interests of social groups, classes, or society' (Skocpol 1985, p.9).

In the field of political economy, the scholars involved sought to articulate the role of the state in economic development. Originally, the (first) developmental state research programme was built essentially on the claim that the state has 'strategic capacities to plan, monitor and enforce key developmental objectives, which will shift the comparative advantage of national economies towards those sectors that are of strategic value in the global economy' (Jayasuriya 2005, p.382). While initially these capacities were identified in autonomous agencies operating outside socio-political interests (e.g. Gerschenkron 1962, Johnson 1982), the second generation developmental state theory, influenced by the neo-Weberian paradigm, placed state autonomy within the state/society relationship.

The notion of state autonomy, which initially communicated the idea of independent state bureaucratic and policy-making activity, was therefore subsequently coupled with the idea of embeddedness of state mechanisms into the wider society, resulting in the notion of 'embedded autonomy', as coined by Peter Evans. This concept sought to overcome the division between state autonomy and embeddedness into the social structural context. In this conceptualisation, autonomy refers to the degree to which state elites and bureaucracies shape policies that are above the interests of their members; Evans claims that the more state bureaucracies approach Weber's ideal type (i.e. based on meritocratic recruitment, secure careers and rewards, independence from external interferences) the more coherent they are, and this gives them a certain kind of autonomy and enables them to contribute to economic development (Evans 1995).

In addition, and unlike Weber's conceptualisation, state apparatuses should not be insulated from external interference (from business, church, the military, etc.); on the

contrary, they should be 'embedded in a concrete set of social ties that binds the state to society and provides institutionalised channels for the continual negotiation and renegotiation of goals and policies' (Evans 1995, p.59); and it is only through embeddedness into society that state policies can have successful developmental outcomes (Form 1997; Hobson 1998).

Based on comparative research, Evans argues that the ways in which states are coupled with their societies vary significantly and this has impacts on the role of the state in the economy, which can be either developmental or detrimental to economic development (or a mixture of both). He claims that successful state involvement in the economy presupposes an understanding of the limits of state action, as well as a realistic positioning in the global economy with close societal links. For him the state is a 'historically rooted institution', the state/society interaction is 'constrained by institutionalised sets of relations', while economic outcomes are 'the products of social and political institutions, and not just responses to prevailing market conditions' (Evans 1995, p.18). His emphasis on diverse outcomes, as opposed to imposing a straightjacket across national cases, makes his approach suitable for this thesis.

The degree to which the state enjoys embedded autonomy is also linked with the capacity of the state. In realist international relations, capacity usually refers to the power of the state, i.e. its resources and their deployment (Gill 2003). However, in other conceptualisations state capacity expresses the degree to which the state actively participates and shapes historical conjunctures, as well as 'interpreting' global processes and formulating their national 'versions' in accordance with its institutional base and its relationship with the national society (Voulgaris 2006). In this respect, state capacity becomes a more elaborate term and involves resource endowment, quality of leadership and political institutions, as well as traditions of governance, national culture and previous political decisions (Smith, Solinger et al. 1999).

A comprehensive notion of state capacity spans a broad spectrum of areas including the economy, institutions and politics. It presupposes capable public bureaucracies, together with competent leadership and the ability of the state to organise social contracts and promote goals in democratic ways. Under conditions of globalisation

this involves an understanding of contemporary problems and the promotion of viable solutions implemented democratically. This calls for the participation of societal forces and the promotion of an active civil society and eventually a healthy and organic relationship between state and society, which is captured by the extent of embedded autonomy of the state vis-à-vis the society (Kotzias 2004).

In this direction, Linda Weiss discriminates between 'despotic' and 'coordinative' state capacity. The former refers to the ability of the state to act without the need to enter negotiations with civil society. By contrast, the latter is the institutional ability of the central state to pervade its national society and see to the application of collective decisions through its institutions; as such, it is a collective power running through the society and involving the coordination of social life through public infrastructures (Weiss and Hobson 1995; Voulgaris 2006). The 'coordinative' state capacity is similar to the notion of Michael Mann's 'infrastructural power', i.e. 'the institutional capacity of a central state ... to penetrate its territories and logistically implement decisions. This is collective power, "power through" society, coordinating social life through state infrastructures' (Mann 1993, p.59). This notion is also quite close to the concept of 'embedded autonomy'.

Neo-Weberian concepts such as 'embedded autonomy' and 'state capacity' signified the advent of a neo-Weberian historical sociology school, which contained a more informed approach to the study of the state in the economy/society and its role in socio-economic development.[15] Embedded autonomy, which implies state capacity, is

[15] Hobson (1998) identifies six principles informing a Weberian historical sociological approach: a) the study of history is a means for problematising the origins of modern domestic and international institutions and practices, as well as understanding processes of change both at the domestic and at the international; b) social and political change can only be accounted for through interaction of multiple forces not-reducible to one another (multi-causality); c) societies, states, and international systems are inherently linked; as a result, national societies and their economic, ideological, political etc. institutions cannot be seen as bounded entities and cannot be analysed through domestic variables only, but as entities partly shaped by international forces (multi-spatiality); d) consequently, power actors such as states or classes cannot be conceived of as completely independent and delimited agents with separate interests; e) change and development (national and international) do not follow predictable patterns, but are subject to unintended influences and interactions between multiple power forces; f) state autonomy is not seen as the ability of the state to separate itself from society, but, on the contrary, is measured in terms of the degree of the embeddedness of the state *within* society: state power depends on the capacity to mobilise society and maintain social consent. State capacity, in Hobson's account, includes its degree of concentration, infrastructural reach and autonomy within society.

taken to express the embeddedness of state mechanisms in wider societal arrangements and their institutional capabilities (ample or limited) to promote social projects. In this respect, it is useful in capturing the information society development process at the national level as a social process, as well as providing the tools for assessing the developmental profile of a nation-state.

The IS/KBE framework together with the neo-institutional literature on capitalist diversity and the Weberian historical sociological state/society perspective through the notion of 'embedded autonomy' can provide a useful array of conceptualisations through which information society developments can be studied. Specifically, they can be the vehicle for approaching the diversity of IS/KBE at the national level in a European context (as national variations of the IS/KBE project identified in historical continuity with national variations of the industrial society and the postwar welfare regimes in Europe).

3.4. Research Design

Research and theorisation on the role of the state under conditions of globalisation has been marked by analysis of states in the industrialised world. Likewise, the information society and knowledge-based economy has been more often than not examined in a developed national context. It is then small wonder that there have only been few attempts to examine the relationship between the state and the IS/KBE in a developing country context and even less in national contexts that belong broadly to the developed world, but are semi-peripheral and middle-income (southern and eastern European countries are cases in point).

To address to some extent this gap we apply our conceptual framework in the context of the evolving characteristics and forms of what we provisionally call the 'Greek case' of information society with a view to examining the dialectic between the European (and global) vision and the national particularities, the role of the state in articulating the European/global frame with the national through rhetoric and policy and the hitherto outcome of the process of bringing about the IS/KBE in Greece. Empirically, then, this is a case study, with emphasis on the period between 1998-2008, which includes the first steps towards an information society in Greece and

provides the opportunity to assess preliminary results of the policies adopted.

A case study is a particularly advantageous research approach when "how" or "why" questions are asked, when the phenomena under investigation are contemporary and when the researcher has little or no control over them. Moreover, a definitive property of a case study is that it examines a contemporary phenomenon in a real-life context, especially when the boundary and context are not clear. Since context is considered important, more interesting variables are expected than the direct data provided by the phenomena under examination, which in turn implies the reliance of the research on multiple sources of evidence and the triangulation of data, while making the formulation of a priori theoretical premises helpful as a guide for data collection and analysis. The case study offers the advantage of combining a variety of research methods, including analysis of documents, interviews, as well as observations (Yin 2003).

Based on the above premises, the case study research method is suitable for the empirical elements of this research. The aim is to interpret central developments in the Greek information society, rather than testing a particular hypothesis. This is an investigation in depth of certain aspects of the Greek case by deploying a predominantly qualitative research methodology. But the inquiry is also influenced by ethnographic approaches, in the sense of at least 'providing a critical way of interrogating', being 'attentive to the internal messiness of any organisation', as well as to the 'failures of technologies to meet the expectations which are made of them and they ways in which failures are recognised and addressed' (Barry 2001, p.23). It also places emphasis on specificity, in particular the national specificity of the case in question.

In other words, on one level our approach is an idiographic one, concerned to bring forward the unique features of the information society in Greece. This approach is consistent with the argument, which itself focuses on variations, unique state/society dynamics and national dimensions. However, while the empirical focus is on the Greek case, the purpose is to make more general claims for information society theory and methodology, as well as for the role of the state in the information age. This aim

is also reflected in the argument, where reference to 'a national IS/KBE' and to 'the role of the state' retain a reasonably general and abstract form.

Since the Greek case is used for extracting more general conclusions that are applicable to other cases a problem of generalisation arises. Yin has addressed this problem by arguing that 'case studies, like experiments, are generalisable to theoretical propositions and not to populations or universes' (Yin 2003, p.10). In this research the goal is to reach certain theoretical outcomes vis-à-vis the information society and the role of the state in a national context; in this respect the case study approach is expected to provide the materials for the production of such "analytic generalisation". While we do not claim that the Greek case is representative of a class of similar cases (despite possible similarities with other countries in the south European context), we do claim that the broad mechanisms of IS/KBE establishment in Greece are to all intents and purposes generalisable (i.e. present in other contexts). In this way, the thesis really looks for the 'indivisible connections of theory and real-world observation' and aims to 'produce generalised statements of significance regarding the character of societies, while committed to ensuring that theories are substantially grounded and subject to reconceptualisation in light of empirical evidence' (Webster 2005, p.442).

3.5. Research Questions

The aim of the thesis is to examine the relationship between the state and the information society drawing from the Greek experience during the period 1998-2008 and using the following research questions:

1. What information society policies have been adopted by the Greek government, and what aims, priorities and ideological framework do they reflect? (to be addressed in chapter 4)

2. How have these policies interacted with the historical, social, economic, political and cultural specificities of the Greek context as encapsulated by the state/society relation? What is the present physiognomy of the Greek information society? (to be addressed in chapter 5)

3.6. Research Methods

Based on a case study research methodology, the thesis includes a variety of data collection methods. The gathering of evidence was informed by the conceptual components mentioned above. The intention was to collect evidence on information society policy, policy implementation and societal responses, placing such policies and responses in the institutional contexts (EU and Greek) producing them and analysing them in accordance with interests and aspirations, as well as pre-existing structures and practices (Evans 1995).

An overview of the EU and Greek policies was obtained through study of relevant documents, including the Greek White Paper of 1999, the OPIS policy document, the "Digital Promise" strategy document, as well as the 2006-2013 strategy. These were coupled with other relevant documents, as well as statistics on the information society in Greece, obtained from the Greek information society site (www.infosoc.gr) (mainly using surveys carried out by the National Research and Technology Network EDET). National statistics were juxtaposed and synthesised with statistical data obtained from relevant Eurostat indicators on the information society in the EU. Last, but not least, two comprehensive overviews of the Greek IT sector carried out in 2006 and 2007 were consulted. These had been conducted on behalf of the Greek Observatory for the Information Society (www.observatory.gr), from which further online data was obtained.

The core of our research methods were elite interviews with about thirty individual actors related to information society policies: the hitherto three special secretaries for the information society and their advisors, members of the special bodies set up to implement the Operational Programme for the Information Society (OPIS), government officials from the Ministry of National Economy and Ministry of Interiors, IT corporate executives and academics. The interviews were semi-structured and open-ended, based on a list of questions to structure discussion around broadly defined areas (the questions are included in Appendix I). It is clear that interviews can offer only partial and subjective views on a topic, but subjectivity was treated as evidence in itself. The choice of open-ended questions was based on the need to elicit the *personal* views of the actors involved. The choice of conducting semi-structured

interviews was to ensure that the responses obtained would be standardised at least as far as the basic topics were concerned. This helped extract many different views on the same set of questions, while leaving open the possibility of follow-up questions. On many occasions, interviewees created links with broader issues of theoretical value.

The interviews were carried between 2005 and 2009 and, generally speaking, lasted between one and two hours. In many cases interview follow-ups were conducted after preliminary analysis of interview results. A group interview with seven IT executives, members of the Public Projects Committee of the Federation of Hellenic Information Technology & Communication Enterprises (SEPE) [16], was conducted at their premises in 2006.

Interview material is deployed in chapter 4 and mainly chapter 5 and direct quotes are provided when the insider's view is considered particularly interesting, or when a degree of detail is regarded as necessary. As this is not the case with all our interviews, not all of them are represented explicitly, though all of them have indeed informed to a greater or lesser degree the collection of empirical evidence. Direct quotes are given in italics, while reference to a particular interview is made by providing the initials of the interviewee alongside the year the interview took place. Appendix II gives a list of the interviewee names and their capacities.

Importantly, the evolution of the information society in Greece in the period under examination was followed on a regular basis, through data sources such as newspapers, magazines and press releases, as well as through visiting the relevant web sites, not least the www.infosoc.gr site, which was established early on. In addition, the issues at stake were discussed and debated in a number of conferences and meetings held in Greece, in which we participated: the 2008 Greek ICT Forum, the workshop on the Greek Information Society organised by the National Technical University of Athens in Ermoupolis, Syros (July 2006), the International Conference: "The Greek Industry in the Knowledge Economy", organised by the Technical Chamber

[16] Founded in 1995 and representing about 400 ICT firms, which cover 95% of the Greek ICT market(www.sepe.gr)

of Greece in Athens (July 2006), the International Conference: "Deployment of ICTs for Electronic Government and Local Development", organised by Central Union of Greek Municipalities (KEDKE) in Herakleion, Crete (May 2006), the 3rd Economist International E-Government Forum: "Reform and restructuring in the Greek public sector through E-commerce, E-Governance and IT policy", in Athens (June 2005), the presentation of the 2006-2013 IS strategy in Athens (July 2005), as well as a SEPE meeting in 2006, which we were granted access to observe.

3.7. Conceptualising Greece through a state/society historical approach

We now turn to the conceptualisation of Greece through a state/society perspective informed by Weberian historical sociology (as appropriated mainly by Greek authors), as well as its positioning within the south European context in terms of certain dimensions. State structures (including bureaucracy) and the state/economy/civil society relation are part of the overall state/society approach that we adopt (Evans 1995).

3.7.1. State, economy and civil society in Greece: dominant reading

As a starting point, in the taxonomy of world system theory Greece is taken to belong neither to the capitalist centre (most developed western economies) nor to the periphery (developing countries), but rather to the semi-periphery. Moreover, Greece can be seen as belonging to the late-late development paradigm, i.e. to the economies where industrialisation only happened after 1929 (in contrast to the late western European industrialisers such as Germany, which were late only in comparison to England).

Late development has been associated with an increased role of the state or state-controlled institutions for direction. As a result, looking into the state entity and state structures, as well as into the relations between the state and the national economy and society, can provide insights as to why late developers with similar starting points still follow different developmental paths and perform unevenly in the world economy (Mouzelis 1986).

The gradual integration of the Greek economy into the world market and the process of urbanisation in the late 19th century gave an important role to the state for building infrastructures and regulating prices and exports. Industrialisation implied the articulation of agriculture with industry, but because this took place in ineffective ways the domestic market that emerged was quite limited. Increasing urbanisation, as a result, led to rising unemployment for large segments of the population drawn to urban centres. These processes coupled with the relatively early development of democracy and parliamentary institutions resulted in increasing pressures for those segments of urban population to be absorbed in the tertiary sector, particularly public bureaucracies, which in turn grew enormously.

The public sector size was augmented and public administration soon became complex, fragmented and inefficient. Moreover, politicians operated in ways that sought to build their own political capital by granting posts and favours, using clientelistic practices, something that resulted in a vicious circle that had further impacts on state mechanisms[17]. In this manner, the state acquired a significantly anti-developmental character which prevented Greece from satisfactory industrialisation and development (Mouzelis 1995; Tsoukalas 1987).

One aspect of the Greek capitalist model refers to the relationship between the state and the state-owned, protected or subsidised industrial enterprises that developed some time during the interwar period or after WWII. When industrialisation took off in the 1930s, the already established state structures were more potent than a still weak industrial sector. This was the historical root of a tendency for the private economic sector to operate under the protective mechanisms of the state (e.g. seeking increased subsidies or other kinds of favourable treatment), rather than improving its own capabilities and building its own momentum (Lyberaki and Tsakalotos 2002). Through 'national champions' strategies, many firms were protected through high tariffs from foreign competition and most continued to enjoy state protection until

[17] Clientelism has its roots in the Ottoman rule when local Greek notables (kontsambasides) played the role of intermediary between the Ottoman authority and the Greek peasants; after Greek independence in 1830 its remained as a practice, albeit modified, with oligarchic families deploying patronage to control the voting processes and ensure that their political interests would be served by the elected government (Garcia and Karakatsanis 2006, p.101).

well into the 1980s (Mouzelis 1986). However, such strategies could only be applied in asymmetrical ways between industries or within an industry: the articulation of the private sector with the state operated from the beginning through clientelistic relations, with certain economic groups enjoying privileged access to public resources.

The Greek model of industrial capitalism that eventually emerged was one where economic rationality systematically succumbed to political imperatives and the accumulation of political capital through clientelistic relations. In contrast to Western Europe in the 1950s and 1960s, Greece's incomplete industrialisation (based on light industry and consumer goods) generated an industrial structure overwhelmingly dominated by small firms.

The late and incomplete industrialisation of Greece and the role of the state in economic development have also affected the character of civil society, taken to denote societal interests, associations and institutions that exist outside of the state (following Keane 1988).

State mechanisms had been in place well before industrial capitalist development, while the fact that they sprang during the end of the Ottoman Empire brought certain authoritarian features. It has been argued that in the absence of truly representative workers' associations, as well as significant civil society organisations (e.g. the Church, which has always had close links with the state in Greece), the political relationship between the state and civil society in Greece has not followed a universal integrative mode, but rather what has been called 'the incorporative-clientelistic mode' according to which the political rights of the population are determined through patron-client networks (Mouzelis 1995). Clientelism has been seen as having had a significant impact on civil society, as it potentially draws each citizen in a 'vertical' way towards individual political participation and thus impedes the formation of horizontal associations to promote common goals and interests (Sotiropoulos 1996).

The Civil War (1946-49) and its aftermath brought about a strong political polarisation that cut through the Greek society. The operations of the state for decades

divided Greek society further by persecuting and systematically discriminating against people of left-wing orientation under a heavily anti-communist ideological framework.

In parallel, insufficient industrialisation prevented the development of traditional industrial unionism, with much lower rates of unionisation than Western Europe. The immaturity of trade unions linked them closely with state interests and locked them in corporatist arrangements in which labour representatives were not equal partners in policy, as in West European corporatist systems (e.g. Germany), but were in fact controlled by the state (Davaki 2001).

The end of the dictatorship (1967-1974) and the advent of the post-1974 era (the process of transition to democracy) marked the end of an era of the anti-communist discrimination and the restrictions to democratic activity that oppressive political powers (Crown, Army and Parliament) had practised since WWII (Featherstone 2005). The Greek governments focused on economic development and pursued a strategy of Europeanisation with a view to accession to the EU (materialised in 1979), although clientelistic practices persisted.

After 1981, when the newly elected PASOK socialist government sought to accommodate its voters by creating new posts, clientelism took a new form as it moved from personalised relationships to a practice operating through parties (Spourdalakis 1998). Populism and short-term practices led to an exacerbation of economic indices and of the condition of public enterprises. Trade unions became more dependent on the state due to their politically-appointed leaderships, while PASOK also exerted great influence on professional associations and civil society associations. The conflictual relationships present in party politics were also reflected in divisions within the major labour unions (e.g. the private General Confederation of Greek Labour GSEE and the Confederation of Civil Servants ADEDY).

The patronage of trade unions and employer associations by the state, the limited independence of social movements from state mechanisms, the lack of significant voluntary organisations, the close connections between the church and the state, as well as the small number of ethnic minorities, all have been taken to compose a picture of a weak civil society and underdeveloped social capital.

The prevalence of clientelism, together with incomplete industrialisation, the lack of adequate social citizenship and welfare rights, the weak trade unions and social movements, the polarisation engendered by the Civil War, the over-reliance on the family and disassociation from broader social collectivities, the appropriating behaviour of civil society and the absence of social corporatism, have contributed to social heterogeneity and have prevented the development of a universalistic and collective culture in Greece (Petmesidou 1996). From the perspective of identity and culture, the argument has been promoted that the Greek national identity had already developed before certain economic, political and cultural national institutions were established. Ideological inclusion thus preceded socio-political inclusion, which in any case operated through patronage networks. The identification with the nation has as a result taken an abstract and romantic form, rather than a concrete set of beliefs and trust in national institutions. This has contributed to the formation of ambivalent national identities combining elements of patriotism with a lack of collective spirit, or maintaining a romanticised view of 'Greekness' as superiority, coupled with a distrust towards Greek public institutions (Mouzelis 1995).

3.7.2. State, economy and civil society in Greece: alternative readings

The above historical account is informed by a particular state/society perspective that has dominated the socio-political analysis of Greece since the 1970s. This perspective has emphasised the overwhelming presence of the state, the undernourished civil society, as well as the dominant function of clientelism in defining the state/society relationship. This approach has been based on the neo-Marxist writings of Mouzelis and Tsoukalas (Mouzelis 1986, Tsoukalas 1987), who have approached the relationship as 'zero-sum', implying that a strong state goes along with a weak civil society and vice versa. A second important tenet is that the civil society has been generally evaluated as a positive entity, possibly incorporating the ideal of a 'good society' (Voulgaris 2006).

Moreover, in this perspective there is an underlying assumption that the Greek state has shaped the Greek economy and society, rather than the former evolving in parallel and in a dialectic relationship with the latter. The structural characteristics of the

Greek state, notably the lack of a Weberian type rational and efficient public administration and the predominance of clientelistic relations are taken to have caused delays and particularities in the Greek society and economy in a deterministic way (Kotzias 1993).

Recently, an alternative 'reading' of Greek history has been proposed, namely one that challenges this particular state/society perspective. On the level of (Greek) historiography, the analytical significance of the dimension of clientelism and the subsuming of civil society under the state through it have been seriously challenged on the basis of two arguments. Firstly, during the 19th and 20th centuries there were clear party divisions and party membership was based on strong ideological associations (rather than political patronage), therefore parties of the time have to be seen as institutions of the civil society. Secondly, the internal economic accumulation processes operating at national or local level were much more dynamic than is commonly assumed and therefore enjoyed relative autonomy from the state and the political system. These two observations indicate that the impact of non-state forces on civil society and the resulting potency of the latter have been significant, something that has been underestimated in orthodox readings, which tend to emphasise the influence of the state (and the importance of clientelism) (Voulgaris 2006). [18]

Like Voulgaris, Sotiropoulos has promoted the argument that civil society in Greece is not as weak as commonly assumed.[19] His argument is that the comparatively

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[18] For reasons of analytical clarity, we take political parties, generally speaking, to be part of civil society (although depending on the circumstances and the complex patronage and clientelistic features of the Greek state structures they could be seen as part of the state system), while we see economic units (from family enterprises to large firms) as part of the economy, a sphere that we treat as separate to civil society. At the same time, we treat representatives of economic groups (employers associations, trade unions etc) as part of civil society.

[19] The definition of civil society adopted by Sotiropoulos is 'a wide-ranging set of social interaction and collective action taking place in the public space available between the individual household, on the one hand, and the state apparatus, on the other' (2004, p.10). This definition is complemented by Diamond, who defines civil society as 'a network of formal and informal groups, voluntary, self-generating, (largely) self-supporting, autonomous from the state, representing different social, political, professional and economic groups. It is distinct from "society" in general, in that it involves citizens acting collectively in a public sphere to express their interests, passions and ideas, exchange information, achieve mutual goals, make demands on the state and hold state officials accountable' (1994, p.6). Intervention in the public sphere with the intention of promoting aggregation,

limited formal civil society is accompanied by an informal civil society; this 'emanates from a flourishing, albeit informal and thus not officially registered, social mobilisation which substitutes for the usual, formal civil society found in modern Western societies' (Sotiropoulos 2004, p.8).

Further, according to Sotiropoulos, there are formal civil associations that are very strong. The associations of liberal professionals (lawyers, doctors, engineers), for instance, enjoy considerable strength, which derives from their high organisational density and their consistently high representation among MPs and cabinet ministers, regardless of which political party is in power. Sotiropoulos correctly points out that these professionals enjoy advantageous social insurance schemes, while their contribution to taxation is less than expected due to tax evasion. Crucially, any political reforms affecting their interests have always been met with resistance from these associations (Sotiropoulos 2004).

Sotiropoulos argues that the trade unions of the wider public sector (unions of state-run banking employees, employees of the power corporation and of secondary education teachers) have also shown considerable strength. These unions have had a long history of strong links with government and political parties, particularly during the PASOK period, when public sector employees were generally among the most consistent PASOK voters.

However, it is questionable whether these links should be seen as indicative of strong civil society, as Sotiropoulos has them, or as an exemplification of state patronisation of trade unions, as in the 'traditional' reading of Greek history. Given the strong links between unions and political parties, it begs the question whether these trade unions can be seen as strong and acting independently in the public sphere, or as patronised by the state, or dominated by political parties of the opposition which have guided them to act against government. The weakness of civil society has been frequently attributed to the influence of political parties, e.g. in Italy. In more recent writings, Mouzelis has similarly put the weakness of the civil society in Greece down to the

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intermediation, or representation of interests is a necessary prerequisite for a group or association to belong to civil society (Sotiropoulos 2004).

extensive role of political parties, departing from his previous emphasis on state structures (see the relevant debate in Pelagidis 2005).

Lavdas has explored the impact of party politics on interest representation and has argued that the observation that 'state institutions, political parties and clientelism have pre-empted the space for independent activity by interest groups' often leads to misleading generalisations (Lavdas 2005, p.299). His objection derives from the realisation that organised business interests have been developed in ways that allowed relative independence from the state and the parties and have been more influential than traditionally presented. Moreover, he resorts to the early roots of civil society developments in Greece, in the late 19th and the beginning of the 20th century, which have seen the emergence of groups with agendas as variant as women's issues and the environment, with the 1909 coup by Venizelos instigating political developments including the establishment of the Federation of Greek Industries (SEB) and the GSEE in 1918. Further, he stresses that the post-war era saw the growth of state-union interactions, trade unions and associations became more prominent and their memberships remained relatively high throughout the period. Last, he points out that after 1974 and the restoration of democracy there has been an emergence of various groups, from women's groups to parents' groups and other associations (Lavdas 2005).

Apart from the relative independence and strength of business associations vis-à-vis the state (e.g. SEB and the Union of Shipowners, founded in 1916), the evidence that Lavdas provides does not suggest elements of a significant civil society.[20] Eventually,

[20] As Lavdas himself acknowledges, some of the early civil society groups (around the 1910s) were provisional; up to the beginning of the 20th century there was a syndicalist tradition with unions of workers and managers, which was outlawed by the Venizelos government in 1914, followed by the formation of GSEE largely by the activities of the government, which subsequently tried to control it; unions were dependent on state finance and were systematically repressed after 1920; in the 1950s, an attempt was made to introduce corporatist decision-making, but there were extensive legal and political state interventions in GSEE, while SEB retained greater institutional autonomy. In any case, the union movement in Greece has been characterised by considerable fragmentation, partly because it is occupation-based rather than sector-based. This has made collective action difficult, while it has facilitated the development of links between individual unions and the government and other political entities, which have operated in parallel with general agreements to secure specific benefits (Lavdas 2005).

his argument is that corporatist arrangements in Greece, involving the state, labour and business interest groups, particularly after 1974, are characterised by fragmentation and political factionalisation of trade unions and at the same time weakness of the state vis-à-vis business interests, an overall asymmetric power situation that he terms 'disjointed corporatism'. Thus, a notable absence of 'social corporatism' able to engage in collective decision-making and negotiate social pacts is identified in Greece and is attributed among else to the two civil conflicts of the 20th century (1916-1917 and 1944-1949), the antagonistic practices and relations between political parties and the lack of a culture of elite accommodation. A manifestation of this absence has been the deadlock in social dialogue throughout the 1970s and 1980s, which has obstructed the Europeanisation strategy (Lavdas 2005).

Based on the above exposition and following Voulgaris (2006), we consider Greek civil society as a domain where contradictory rationales and objectives coexist and interact with the economy and the state. A crucial question then becomes the extent to which the organisational forms, objectives and practices of civil society are informed by an ability to pursue universal democratic goals, or rather by an egoistic behaviour orientated at the satisfaction of self-interest that contradicts democratic ideals. Both motives will co-exist in (any) civil society, but the relative proportion of these two contradictory logics can be evaluated within a socio-political democratic framework.

Along these lines, Voulgaris argues that civil society in Greece is characterised by a strong orientation towards appropriation and pursuit of self-interest and by a weak orientation towards universal democratic goals. Manifestations of the former are the ability of civil society to appropriate public functions and resources, together with the power to veto state initiatives, as well as the extent of corruption and 'amoral' corporatism. Expressions of the latter are the frequent myopic and irrational collective behaviour, the limited strategic and developmental sightedness of socio-political

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Further, it is questionable whether the high membership figures, as well as the increased number of strikes, notably after 1974, should be seen as signs of strong unions, due to the influence of parties and the state on trade unions, as discussed above. Finally, while Lavdas interprets positively the post-1974 emergence of various associations, others have seen most of them as state-dependent; in the case of women's groups, for instance, it has been convincingly argued that state patronisation skimmed the radical elements from the autonomous feminist movement of the 1970s and early 1980s, reducing them to claims that would be introduced as legislative reforms by the leadership of the parties with which those women's associations had been affiliated (Davaki 2001).

agents, as well as the exaggerated ideological masquing so as to cover up the gap between democratic values and particular egoistic practices.

Recent alternative approaches have also argued that the traditional characterisation of the Greek state as being dominated by foreign influences in the design of its institutions originates from the theories of dependency of the 1960s, which do not seem to apply in Greece. Dertilis (2006) claims that although the state has systematically imported modern practices from abroad, it has also modified and adjusted them to the national circumstances. Further, the fact that the Greek state has been more effective vis-à-vis the other south European states in addressing the social imperatives of modernisation, as well as in maintaining democratic institutions for a long time should not be underestimated.

What seems to have been the case, however, is that the Greek state has shown limited capacity to coordinate different social groups under circumstances of modernisation. This limited coordinative capacity has been dialectically related to the appropriation and self-interest of civil society and to the lack of proper insulation of state decision-making from civil society interests, a realisation which reminds of the concept of 'embedded autonomy'.

Caloghirou, Ioannides et al. (1993) have examined the role of the Greek state in economic development before and after the 1970s and have argued that there has been a systematic time-lag in relevant policies: until the mid-1970s, when Western European governments pursued demand-management and active industrial development policies, the Greek state, albeit interventionist, was relying on the private sector and on foreign capital, with minimal public investment in manufacturing and the absence of any attempt to promote indigenous processes of industrialisation; by contrast, after the mid-1970s, the role of the Greek state became active in economic development, but at a time when fiscal crisis was emerging in Europe and when such policies were becoming unsustainable.

Caloghirou, Ioannides et al. qualify the traditional view that the Greek state has overall lacked a rational, developmental and strategic behaviour and has often resorted to ad hoc and fragmented interventions, in response to pressures, rather than

having a systematic approach to policy. They argue instead that the pursuit of unsustainable policies since the mid-1970s was the result of contradictory demands that the state had to address during the period. Specifically, on the one hand the opening of the national economy to international competition, which was accompanied by state policies to defend employment, respond to the decline of private investment, maintain existing production structures and subsidise products. On the other hand, significant shifts in the political spectrum towards the Left, which reflected shifts in socio-economic stratification and necessitated that the state met social demands from segments of the population that had been left out in the previous period of dictatorship and the overall post-war period.

Other recent theorisations have sought to overcome the limitations of the traditional reading by referring to models of capitalist diversity presented in section 3.3.1. Gunther, Diamandouros et al. (2006) identify the common structural characteristics of a southern European state that has developed historically in Spain, Italy, Portugal and Greece (notwithstanding the exceptions in each case). These characteristics define a distinctive state/society relation, which reflects the particularities of south European capitalism and, being dissimilar to state/society relations in northern and western Europe, verifies the capitalist diversity argument.

In their approach, Gunther, Diamandouros et al. conceptualise these states as both 'heavy' and 'weak'. The 'heaviness' of the southern European state is associated with the great centralisation of state power, which in Greece was introduced by the Bavarian monarchy selected by the Great Powers to rule over a peasant population that was divided by local rivalries. Centralisation was coupled with the use of coercive force against those threatening the establishment and the frequency of periods of emergency or dictatorial rule. The interventionist role of the state in the economy, an expression of this 'heaviness', was very prominent in the 1960s and 1970s across industrial and service sectors, and included tariff protection, preferential treatment, and overall protectionist practices to defend the interests of economic elites.

The 'weakness' of the southern European state derives from a number of factors: the sustained power challenges from local elites in the second part of 19th century, which involved systematic tax evasion and the resulting unjust distribution of state assets, as

well as insufficient revenues and growing public deficits; the prominence of the military establishment, often taking the rule in its hands, something manifested in Greece from 1821 until the 1860s, and more so in the 20th century; the inadequate, almost rudimentary provision of social services, which has been a far cry from the universalistic schemes of Western Europe, as well as regressive taxation systems and inadequate revenues to support state activities; the ineffectivess in promoting economic development, until at least the 1980s or 1990s (in Greece); the fragile legitimacy, originating from mistrust in royal authorities, but also partly due to the early introduction of parliamentary rule before social and economic development (Gunther, Diamandouros et al. 2006).

In addition, state weakness is associated with the southern European model of bureaucracy (first visible in the 19th century), the characteristics of which have been persistent in Greece in the beginning of the 21st century. First, political clientelism at the top level, meaning the political party-mediated appointments at the top levels of bureaucracy, as well as promotions and transfers to high civil service. Second, political clientelism at the low levels, i.e. selective recruitment at entry-levels jobs in public administration.[21] Third, the uneven character of the public sector, which is characterised by unbalanced distribution of personnel and resources. Fourth, the overproduction of laws, as well as the rigid and complicated nature of legal frameworks. Fifth, the lack of institutionalised administrative elite with considerable political and social stature and a corresponding lack of Weberian bureaucratic culture based on rational/legal expertise. Sixth, the systematic administrative inefficiency (e.g. in collecting taxes, or allocating resources, or even in routine tasks). Seventh, widespread political "petty" corruption, i.e. involving low and middle-ranking bureaucrats (e.g. bribes to issue certificates and grant permissions) (Sotiropoulos 2004, Sotiropoulos 2006, Lyberaki and Tsakalotos 2002).

Since the 1970s, south European countries have witnessed processes of democratisation, Europeanisation and modernisation and have approximated western

[21] This has been another dimension of the 'heaviness' of the state, as employment was offered both to government and the parastatal agencies created, while each change in government meant an additional layer of employees added to the public administration.

and northern Europe in terms of partisan politics and economic change. Nonetheless, the southern European state and its patterns of public policy outputs have continued to exhibit institutional legacies that impede substantial change (in certain sectors more than in others) (Gunther, Diamandouros et al. 2006).

3.7.3. Capturing Greek idiosyncrasies

Building on the above accounts, we seek to avoid economic or political determinism in the explanation of the basic characteristics of the Greek socio-economic and political formation. Our aim is to escape from explaining Greek modernity in a singular way, overemphasising either the role or capacity of the state, or the degree of industrialisation of the economy, or the character of the civil society. Having said that, it would be inadequate to underestimate the role of incomplete industrialisation, the operation of clientelism and the structural deficiencies of public administration. Elements of both the traditional and the more recent alternative readings of the historically evolved state/society configuration have to be retained.

We therefore opt for a multi-dimensional approach and argue (in summary of the above debates) that the combination (or dialectic relationships) of the state, the economy and the civil society can indeed provide a more comprehensive and historically informed picture of Greece. This physiognomy we believe to be based on the following dominant dimensions of Greek politics, economy and society crystallised in the period from the 1970s and still present in the beginning of the 21st century (Featherstone 2005). These dimensions are treated as expressions of the particular state structures and the state/society relation in Greece, in accordance with our conceptual framework.

a) Public administration has been systematically subject to abusive interventions by successive governments for purposes of bureaucratic clientelism, something which has prevented the development of a Weberian bureaucratic culture based on rational/legal expertise (Lyberaki and Tsakalotos 2002). [22]

[22]The link between meritocratic recruitment and the cultivation of bureaucracies with shared norms and culture is addressed by Evans and Rauch (1999) who argue that meritocratic recruitment and

b) State/economy relations are characterised by over-regulation and strict legal frameworks, while suffering from an unhealthy relationship of mutual dependence which involves corruption and patronage in the allocation of favours and contracts.

c) There is a high degree of centralisation of state power, with government in Athens determining allocation of resources and setting the rules, regional and local authorities depending on the centre, but also resorting to standard practices of micro-corruption (e.g. bribery in order to issue certificates).

d) The public policy process is hierarchical, with complex relations between ministers and personal advisors often operating across ministries, weak connections with the civil service, the absence of think tanks and policy communities and a lack of social dialogue ((Ladi 2005).

e) Parties over-determine politics (Pelagidis 2005), while inter-party relations are highly conflictual and built on opposing social identities and competing patronage systems.

f) Formal civil society (measured in terms of organisations and participation rates) is limited and organisations are often dependent on state mechanisms. However, informal civil society mechanisms are significant and should be taken into consideration. Importantly, interest mediation is characterised by a potent rent-seeking behaviour from sectional interests, which reveals a civil society strong in its appropriating potential. The state/business/labour industrial relations are characterised by a disjointed corporatism, whereby labour unions tend to be patronised by the state and the political parties, while the policy capacities of the state regarding business are weak, a situation which accounts for the fact that 'social dialogue in Greece remains an exercise with a limited scope' (Lavdas 2005, p.298).

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predictable career development help the creation of a more cohesive bureaucracy that pursues long-term goals more effectively, including advocating public sector infrastructure investment rather than consumption expenditure and other short-term goals.

g) Political culture shows mistrust of the state, in particular regarding its regulatory and redistributive functions, but is accompanied by rent-seeking individualist behaviour. It incorporates the ambivalence between patriotism on the one hand and individualism and lack of collective spirit on the other (Tsoukalas 1993).

The above characteristics paint a picture of Greece in the beginning of the 21st century across the economic, political, social and cultural spectrum. According to our broad argument, such characteristics are expected to play a role in shaping the Greek information society, as well as in the forms that it might take. Understandably, the relative contribution of each of the above factors is not expected to be the same; nor can each contribution be singled out in order to produce a direct mapping of historical realities and their contemporary replication in the information society in Greece. Last, these characteristics can only paint a partial picture of current affairs in Greece.

During the 1990s the 'modernisation' project of Prime Minister Costas Simitis (1996-2004) sought to overcome the 'anomalies' of the Greek economy, society and politics. This ambitious socio-economic project was centred on the mission of securing the position of Greece at the core of EU both in economic and in political terms (including incorporation in the core of the Eurozone). It is during the Simitis period that a systematic political attempt to promote and implement an information society in Greece has taken place for the first time.

In chapter 4 we elaborate on the 1990s modernisation project both because it informs the information society rhetoric adopted by the Greek governments and because it can serve as a general canvas on which patterns of continuity and change, as well as structural constraints can be identified. Subsequently, we examine how these patterns and constraints play out in the implementation of the Greek information society project in chapter 5. Our interest is to investigate the interaction of the Greek state/society relations in emerging IS arrangements (both in their development and in their crystallised form). In order to do so and for reasons of feasibility of our research, we choose to concentrate only on the dimensions grouped by Featherstone, as outlined above. We take them all to be part of the same picture, i.e. partial manifestations of a national state/society relation.

3.8. Conclusions

Following from the literature review, this chapter has laid out the conceptual and methodological approach of the thesis.

We started by declaring our intention to maintain a balance between continuity and change regarding the IS/KBE paradigm and its relationship with the state and its functions. The object of study has been identified in these two questions: firstly, the role of the state and the ways in which its forms and functions are transformed with respect to the IS/KBE; secondly, the extent to which there are national variations in the manifestation of the IS/KBE paradigm in a national context. We have outlined our interest in the national aspects of the information society paradigm through our argument, linking the development of a national IS/KBE with the translation of international policies according to the national state/society dynamics, while stressing the role of the state in this process.

In order to address this argument, we have resorted to two conceptual pillars.

Firstly, a high level approach (by Jessop) placing the advent of the IS/KBE in a context of a broad post-Fordist societal transformation and linking it with a transformed role of the Keynesian welfare state to a Schumpeterian competition state. This conceptualisation will be deployed in chapter 5 to provide a lens for analysing the activities of the Greek state in view of IS/KBE policies and developments.

Secondly, an eclectic approach to enable us to study the national variations of the IS/KBE transformation. We have drawn on well-established models of capitalist diversity, which help position a national case. As the Greek case has been identified as our empirical domain, the south European context seems an obvious point of departure in identifying national characteristics and particularities. Nonetheless, since models often obscure as much as they reveal, we have also sought a more profound historical state/society approach, borrowed from historical sociology. Within this, we have stressed the concept of embedded autonomy (and of state capacity), which provides a tool for examining the developmental, or otherwise, role of the state in processes of modernisation. This concept will be drawn upon in chapter 5 to provide

an evaluation of the developmental qualities of the Greek state. In order to dig deeper into the construction of the Greek social formation, we have presented a brief evolution of the Greek formation drawing both on dominant (or traditional) and alternative (or more recent) state/society historical approaches. We have ended this conceptualisation of the national context with an eclectic list of historically formulated characteristics. These seem to provide an adequate (though incomplete) picture of Greece at the present and are used in chapter 5 as signposts that inform the analysis of the implementation of contemporary information society policies.

The two conceptual pillars are seen as compatible. Although providing a generic conceptual framework which identifies a social transformation, Jessop does not position himself with the information society theorists who see it as an ahistorical social transformation. On the contrary, he identifies the origins of the information society discourses and the strategies in which they have been used to enable the establishment of the new paradigm. Moreover, he emphasises the need to study the information society in different contexts and anticipates variations by bringing our attention to the social relations that are present in the national context, including those emanating from or implicating the state. The state/society historical approach indeed provides a picture of state structures and state/economy/civil society relations in the national frame. It is also compatible with Jessop's strategic/relational approach to the state.

Moving to chapter 4, we present the evolution of IS policy in Greece with the intention of identifying its objectives and ideological underpinnings. In doing so, we identify its rhetorical antecedents in the relevant policies in the EU. This exercise provides a critical background before moving to chapter 5, where the articulation of IS policies with the pre-existing economic and socio-political arrangements in Greece is analysed through the application of the conceptual framework and the deployment of the empirical data gathered in the research process.

CHAPTER 4: EU AND GREEK POLICY - THE INFORMATION SOCIETY IN GREECE

4.1. Introduction

Chapter 2 contained a quasi-archaeology of the idea of the information society. It also demonstrated to a certain extent how the general preoccupation with IS was made possible due to the a priori exposition of social actors (individuals, groups, states) to dominant, hegemonic discourses (e.g. neo-liberalism, competitiveness, development, etc.) and around the idea of information and ICTs as central in contemporary Western capitalist society. These discourses have emanated from a variety of sources (intellectuals, universities, politicians, multinational corporations and professionals) that have been in a powerful position to shape and guide the subject. Moreover, they have been propagated through mass media in their capacity to circulate globally ideas and particular interpretations (Stehr 2002).

The search for and formulation of international and national information policies has been a significant issue for more than twenty years. These processes are inextricably linked with developing notions of the information society, which they use as a starting point so as to promote and justify particular policy directions (Duff 2004).

At the European level, in particular, the information society debate has been structured around the realisation of the pervasive character of ICTs in a number of cultural, economic, political and organisational domains of social life. Moreover, it has involved a discursive and power struggle over competing views within established political institutions; these views have communicated representations of wider cultural, social and economic changes and choices. Goodwin and Spittle speak of a gap between how technological, social and cultural change is represented and communicated by political actors and the 'objective' reality of the situation: 'Political debate over the information society...is firmly rooted in, and oriented to, a set of

discursive, material and power relations articulated with reference to an historically established order of discourse' (Goodwin and Spittle 2002, p.244). [23]

We now turn to the presentation of the information society policy at the EU level, to be followed by the evolution of similar policies in the Greek context. The objective is to address the first research question by looking into the ways in which the EU information society agenda has framed the relevant agenda in Greece. Following that, we sketch a preliminary picture of the current situation of the information society in Greece based on selective indicators of ICT diffusion coupled with short descriptions of ICT use in certain domains. Chapter 5 complements this with a more in-depth analysis of the processes towards the establishment of the information society in Greece since roughly around the 1990s and with emphasis on the period 2000-2008.

4.2. The evolution of information society policy in the EU

Since the 1970s, when the discourses about state failures emerged, Europe has been actively promoting regionalism through common policies and inter-regional agreements under the auspices of the Single European Act. During the 1980s the objective of creating a common European Market by 1992 became a priority in the operations of the European Commission. The process of harmonisation that would establish common standards and regulatory frameworks for European products and practices was central in the 1992 neo-liberal project. In this, the EU mechanisms delegated responsibilities to a number of governmental and non-governmental organisations for the implementation of the necessary regulation. However, complete standardisation was not possible and there were resistances to the adoption of, as well as different interpretations of standards and regulations (Barry 2001).

[23] Similar arguments are promoted by Chadwick (2001), who approaches politics at a symbolic level to show how ICTs themselves are deployed to communicate specific representations of the information society; or Karim (2001), who deploys the work of the French sociologist Jacques Ellul on myth and propaganda to analyse how the information society is discursively constructed around ancient myths of paradise.

4.2.1. Early visions

The rapid technological developments in information and communication technologies (ICTs) since the late 1980s, coupled with the development of the US vision of the 'information superhighway' and the neo-liberal orientation of the EU, gave rise to a vision of the information society articulated by the EU circles since the early 1990s (Dutton 1996; Mansell and Steinmueller 2000). The primary vehicles for conceiving of and communicating information society policy have been the European Commission and the Information Society Project Office (ISPO), the main advising body for ICT policy to the Commission. The vision more or less invokes 'the idea that the information revolution opens a path to new opportunities for sustainable growth and development, new potential for social inclusion and representation, and new ways to achieve social and cultural expression' (Mansell and Steinmueller 2000, p.9).

Under the presidency of Jacques Delors, the 1993 European Commission White Paper *Growth, Competitiveness, Employment: The Challenges and Ways Forwards into the 21st Century* was the first influential policy document communicating the information society idea. It revealed the importance attached by policy makers to the opportunities and challenges involved in its emergence, which it linked with European competitiveness and prospects for growth and employment, particularly in skilled jobs and the creation of new services. At the same time, however, the risks of unemployment, notably for people without skills, and potential social segregations were highlighted, as well as the need to be prevented through appropriate policies (European Commission 1993).

The White Paper put emphasis on the pervasive character of ICTs and their transformative role in production, organisation, management, labour relations, work and life patterns. The production and employment opportunities at stake (including new forms of partnerships between organisations) should be taken up by European countries in order to gain competitive advantage. The idea was that the information society provided opportunities to overcome chronic European structural problems, but also that social regulation was necessary to tackle the negative effects of progressive change (Mansell and Steinmueller 2000). The paper placed emphasis on the importance of the 'network industries' (telecommunications, energy and transport)

and called for European-wide activity to develop an information and communication infrastructure in the public interest, in the same way as with railways and the telegraph a century earlier (Barry 2001).

Subsequently, the so-called Bangemann report[24] was produced for the meeting of the European Commission in March 1994 in Corfu. The report set out the following priorities: a) promoting the use of information technologies; b) providing basic services at a European level; c) creating an appropriate regulatory environment; d) developing training in the new technologies; e) improving technological and industrial performance. The need to be aware of the technological potential presented by ICTs across all sectors of society and the economy was emphasised: managers needed specific training to become aware of the potential of ICTs and their organisational and socio-professional implications; technicians and other workers needed to integrate ICT-related aspects into their trade; companies needed to identify the strategic objectives, the functions and support to be provided by the system, while students should use ICTs to tackle general education and training problems (European Commission 1994a).

The report stressed the market-driven character of the information economy and suggested ten applications to launch the information society, namely teleworking, distance learning, a network for universities and research centres, telematics services for SMEs, road traffic management, air traffic control, health-care networks, electronic tendering, a trans-European administration network and city-information highways (Chadwick and May 2003).

The White Paper and the Bangemann report therefore presented a specific vision of the information society, comprising the following elements:

a) ICTs have a transformative role in production, organisation, management, labour relations, work and life patterns; they provide opportunities to overcome chronic European structural problems; they open a path to new opportunities for sustainable

[24] After Martin Bangemann, the chair of the High-Level Group on the Information Society, which included nineteen senior members from government and industry.

growth and development; they offer new potential for social inclusion, representation and cultural expression.

b) To be at the forefront of these changes, policies are required in order to create a suitable regulatory environment, improve training and education, so that a common technical infrastructure is developed and deployed across Europe that will support information exchange and the production of new services.

c) Steps need to be taken to mitigate or prevent processes of exclusion that accompany these changes, as well as to preserve a European character of the information society.

d) Awareness of the scale and importance of the changes involved needs to be raised at all levels of society in Europe (Mansell and Steinmueller 2000, pp.16-17).

The tone of the White Paper and the Bangemann report was quasi-deterministic, in the sense that the potential of ICTs to restructure production processes and to lead to new goods and services was taken as given. Moreover, the opportunities involved in the information society were highlighted, but at the same time the need to adapt to and exploit these technological capacities through building new regulatory frameworks and new skills was stressed. This was the rationale behind the creation of a common (pan-European) information area. This rhetoric clearly involved the dialectic of opportunity and threat: immediate action was required to reap significant benefits, while inertia would mean missing out on potential competitive advantage vis-à-vis the US, Japan and other major players. It is worth noting that the EU IS policy until the early 1990s was written by industrialists and this was reflected in its techno-economic spirit (Antirroiko 2001).

The idea of the network was also central in this IS vision: new ICTs were expected to bring about monumental changes in political and personal life, challenging traditional hierarchical authorities and promoting decentralisation and interactivity. Furthermore, networks were considered instrumental in realising a distinctive European information society by strengthening European culture, producing more active and participating European citizens and respecting and protecting cultural diversity in a somewhat mechanistic way (Barry 2001).

These proposals were followed in the action plan 'Europe towards the information society' designed by the Commission in July 1994. It contained four action lines: a) the adaptation of the regulatory framework for telecommunications to facilitate infrastructure liberalisation (54 actions); b) the promotion of network, basic services, applications and content (27 actions); c) the harnessing of the social and cultural impacts of the information society (5 actions); d) concrete activities to promote the information society (11 actions) (European Commission 1994b, Sancho 2002). The main target was the legal and regulatory framework, with emphasis on areas where the economic aspects were central: competition, standardisation, interoperability, tariffs, intellectual property rights, media ownership. The social and cultural dimensions included issues of the flexible firm, the language industries, or regional cooperation, i.e. considerations that were not significantly linked with social and cultural aspects. This plan was updated in the 1996 Rolling Action Plan, in which 'People at the Centre' was a significant motto; in practice, the change was reduced to shifting actions from the regulatory and legal framework pillar to the 'People at the Centre' pillar (European Commission 1996), although these actions were really about creating the appropriate business environment (Berleur and Galand 2005). When applied, these plans were not attentive to stimulating demand for new applications and services and as a result policies promoting universal services, training and building infrastructures were not so pronounced (Jordana 2002).

The Bangemann report is considered very influential in framing the EU policy agenda for the information society as business-oriented and market-driven (Antirroiko 2001), excluding civil society forces (social movements, trade unions, academic institutions, professional associations) from participation in the formation of policy (Chadwick and May 2003). Despite the obvious relevance of the state in the implementation of certain dimensions of the vision (education and training programmes and prevention of new forces of exclusion and geographical disparities, or promotion of institutional changes for the adoption of ICTs), the role of the state was not stressed enough in this early vision; on the contrary, it was the market that was given a prominent position to drive the process. Furthermore, although citizens' rights featured in the Bangemann document, citizens were often referred to as 'consumers', their rights were rights of choice in the consumption of products and services and their quality of life was synonymous with universal access to new commodities through new technologies.

Other alternative voices operating in EU mechanisms (e.g. in the Directorate General for Science, Research and Development, DGXII) communicated at the time the idea of bringing the social and technological aspects of the EU project together. Members of the Commission emphasising diversity stressed the imperative to address socio-cultural needs in technology policy: 'The ideal of a common policy was not sufficiently sensitive to the fact that policies and instruments had to be adjusted, to take account of the diversity of different regions and actors, and their autonomy, and to value it' (Barry 2001, p.98). These voices were, however, confronted by institutional and technological legacies in science and technology policy anchored in traditional ways of thinking and the celebration of advanced technology, technological innovation and competitiveness.

In parallel, and in response to the 1994 Action Plan, the Commission set up in May 1995 a High-Level Expert Group so as to address the social aspects of the information society. [25] This group, which involved a number of prominent academics and experts in ICTs challenged the dogma of technological determinism and by April 1997 prepared a report which approached technology as a social process, stressing its organisational, social and cultural embeddedness and moving away from the imperatives of deregulation that were ostensibly imposed by the dynamic technological properties of ICTs. The development of technological capabilities in Europe was highlighted, but it was seen as an endogenous process, 'negotiated and mediated both within organisations and at the level of society at large' which meant that policies 'cannot and should not be limited to addressing the economic integration of technological change, but must include all aspects of its broader social integration' (European Commission 1997, p.20). Simplistic adaptation to the imperatives of technology was rejected, while participation to the opportunities presented by technology and the shaping of the future was advocated.

The role of the public sector was defined as 'the guardian of competition'; developing a proper regulatory framework was seen as a central element of the role of

[25] The group was set up by Padraig Flynn, the then Commissioner for the Directorate General for Employment and Social Affairs.

government and as a necessary economic imperative for the information society. Nevertheless, the prospect of limiting the involvement of the public sector to 'an economic enabling function' entailed 'to grossly underestimate the role and importance of public agencies and services as information providers and processors' (p.28). The public sector was taken to be one of the most important engines of growth in the European IS, a main point of differentiation from the US IS policy.

Further, the report stressed the 'need for a clearly agreed common minimum social framework in Europe' and warned that 'failure to achieve agreement on a set of common minimum social policy standards will ultimately bring about the erosion of the various social welfare systems in Europe' (p.52). The issue of regional cohesion was given prominence and universal access to telecommunications infrastructures featured as a central question, along with concerns that liberalisation would entail investment in commercial opportunities at the expense of regional and peripheral development. Finally, the report emphasised the challenge of achieving competitiveness on the basis of cultural, educational and social variety.

Another parallel initiative was the Information Society Forum, set up in 1995 and made up of 128 members from industry, public services, SMEs, academics, trade unionists, regional and city representatives, publishers, authors, film and TV producers, software and information service providers, telecommunications employees, members of EU institutions; half of them were nominated by the member states and the other were selected by the Commission. The purpose of the Forum was to provide to different social partners the opportunity to take part in the debate about the challenges towards the information society, including the societal aspects and to raise public awareness regarding these issues. It published three reports (1996, 1997, 1999) and made recommendations regarding access, public administration and services, democracy and rights, European culture, job creation, teleworking, sustainable development and regulatory framework (Information Society Forum 1996). Significantly, it proposed a distinctive European way, based on the search for balancing dynamically competing goals and concerns (Berleur and Galand 2005).

The Green Paper 'Living and Working in the Information Society: People First' was introduced by the Commission in 1996 so as to 'promote wide discussion and

awareness of the social and societal issues involved' and contribute to the participation of a variety of actors in order to 'come to terms with the new challenges and choices' (European Commission 1996b, p.7). In the last section, the paper addressed the idea of a 'European way' to the information society: 'The European social model is built both on competition between enterprises and solidarity between citizens and member states. The European information society must draw strongly from this economic, social and cultural strength, linking technological, economic and social aspects together in the creation of new opportunities for all its citizens'; finally, the invitation was extended to all interested parties 'to reflect on the possibility of formulating a set of common Community principles for the development of the European information society' (European Commission 1996b, p.32).

Nevertheless, despite these alternative, more socially conscious initiatives, the early debate over the information society in Europe was overall structured in terms of a series of discourses that privileged the economic at the expense of social and cultural factors, with resulting implications for the type of information society to be implemented. These derived from an institutional context that was not putting its emphasis on the social sustainability of the information society and should be seen as part of the overall character of the EU integration processes (Goodwin and Spittle 2002).

4.2.2. Telecommunications liberalisation

The liberalisation of telecommunications was a very prominent feature in the Bangemann report, as it was considered instrumental in the evolution of the information society. Nicholas Garnham identifies a range of policy approaches that drove liberalisation, involving different economic models and different definitions of the problems at stake. Firstly, the view (held by both national governments and the European Commission) that network infrastructures and services were inadequate at the national level, together with the concern about the monopsonistic relationship between national telecoms operators and respective equipment suppliers and the fragmentation of the European equipment manufacturing industry, which was seen as the reason of US and Japanese domination in equipment. Secondly, the approach viewing telecoms networks as necessary infrastructure for business, resulting from

pressures from the corporate sector, notably multinationals, for competitive (as opposed to monopolistic) supply of networks and services, and aiming at facilitating cross-border flows with harmonised regulation. Thirdly, the view regarding telecommunications as necessary for the development of the ICT sector. Fourthly, the EU view that the national nature of telecoms prevented the realisation of unification and efficiencies at a cross-national level. Fifthly, the perspective that emphasised telecoms as a vehicle for social and economic development, which subsequently gave rise to the information society vision with telecoms as the infrastructure of the knowledge-based society (Garnham 2004).

In addition, two techno-economic trends also played a major role: firstly, the growth of multinational corporations, which generated demand for global telecommunication services (which the existing national monopolies could not meet); secondly, technological convergence between telecommunications and computing (and corresponding industries), which led to low costs and removed the barriers to entry in the telecoms market (Schneider 2002).

The above perspectives and developments informed the actions of a network of mainly business actors who set out to effect changes on the existing regulatory frameworks. National governments used the European directives to build coalitions to change their national telecommunication arrangements and the role of the state in them (Jordana 2002). Private initiatives were seen as a central source of communication infrastructure funding.

The period from the mid-1990s indeed witnessed a decline in state ownership and a shift in the role of the state in ICT policy through the liberalisation of traditionally state-protected national telecommunication sectors under continuous pressures from the private sector (the main driver behind ICT diffusion in Europe), as well as from European Community authorities, during cycles of negotiation and strong contestation. The role of broader international organisations, notably the World Trade Organisation (WTO), was also instrumental. In the 1997 WTO negotiations on basic telecommunications, the European Community committed to complete liberalisation of basic telecom services (local, long-distance and international), as well as all mobile

communications and satellite networks and services, across the Community with a few exceptions (mainly voice telephony in south Europe).

These liberalisation, deregulation, and privatisation processes in Europe were placed in a framework of neoliberal thinking emphasising the inadequacy of the public sector to deal with new technological necessities and the need to introduce competition and let the market forces operate under independent regulatory authorities. The relevant policies were legitimised by use of the neo-classical model according to which deregulation and re-regulation should facilitate market entry and price competition would increase consumer welfare. They were also informed by the Hayekian model of the market as a mechanism guiding choices (through prices) in circumstances of uncertainty and more significantly by the Schumpeterian competition model, which placed innovation at the centre of profit and monopoly rents (Garnham 2004).

4.2.3. The Lisbon Strategy and the eEurope initiatives

The EU Lisbon summit in March 2000 can be seen as a turning point, in the sense that it placed the information society and the knowledge-based economy high on the European agenda. It emphasised that Europe faced the challenges of a transition to a knowledge society and the need to set up a competitive platform, but also stressed the need to sustain the European social model, maintaining social cohesion and cultural diversity. According to the conclusions of the summit, the Union sought 'to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion' (Council of the European Union 2000). Economic development remained at the centre of IS policy, the promotion of the information society being one of the key vehicles for achieving the economic development goals set in Lisbon until 2010 (Alabau 2004). The challenge has been 'to be able to catch up with the US and Japan in areas concerning the knowledge society, as well as to reconcile the economic and social logics in new forms of economic competitiveness and social justice' (Telo 2002, p.257).

The Lisbon strategy has aimed to achieve deeper economic and societal convergence in Europe, beyond the monetary criteria of the European Monetary Union. A new

open method of inter-state coordination for the acceleration of the translation of European goals into national policies has been adopted: 'This method combines European coherence and respect for national diversity. It defines the required European guidelines in each policy domain, subsequently identifying best practices and reference indicators and, finally, materialising in national plans consisting of concrete targets and measures fitting each nation's case. Its purpose is to set up a vast process of innovation, learning and emulation between European countries, in which the European Commission may play a new role as catalyst' (Rodrigues 2003, pp.18-19). Although diversity is promoted, the concept of *coordination* is seen as stricter than previous arrangements which were based on inter-state *cooperation.*

The open method operates on the principle of subsidiarity, established during the Maastricht Treaty, according to which the European bodies should engage only with projects that could be carried out by the member states acting alone. To many this is a state-centric view emphasising the centrality of the nation-state in the European system. A decentralised approach in policy implementation has been adopted, involving actively the member states, the regional and local actors, as well as social partners and civil society and NGOs in various forms of partnerships. Developing new modes of governance based on social partnerships and not only on market forces is seen also as a departure from previous policy.[26] The Commission has been assigned multiple important roles, namely expertise and consultancy, but also preparation and periodical examination of national policies, as well as proposals of recommendations to the Council and to the member states. Overall, a culture of evaluation and exchange of best practices has established itself in the EU (Telo 2002).

The open method has been applied to a number of policy domains, including information society policies in the context of the 'eEurope 2002: An Information Society for All' initiative, launched in December 1999 by the new Directorate General 'Information Society', directed by Erkki Liikanen. The eEurope initiative purported to

[26] The method is called 'open' because: a) European guidelines can be adapted to the national level; b) best practices should be evaluated and adapted to the national and local context; c) there is a distinction between reference indicators set up at the European level and concrete targets set by each member state for each indicator, in accordance with their point of departure; d) monitoring and evaluation takes the national context into consideration; e) the development of the method is open to the participation of civil society actors (national, subnational, supranational or transnational) (Telo 2002).

promote an information society with specific European values and principles; its objectives were a) to bring every individual, household, enterprise and administration into the digital age; b) to create a digitally literate Europe with an entrepreneurial culture; c) to ensure social inclusion and social cohesion and build consumer trust (Berleur and Galand 2005). The social aspects were incorporated to achieve critical mass for consumption and eGovernment: 'European citizens are usually referred to as workers who should learn new skills and become more efficient in their work, or consumers or service users fulfilling their duties in consuming multimedia products and using electronic services effectively, thus creating critical mass for market-driven policy development' (Antirroiko 2001, p.33).

The initial document was written by three executives of the new Directorate General and set out ten priority areas for joint action by the Commission, the member states, industry and citizens. These can be compared to the ten applications of the Bangemann Report and included:

1) Bringing the Internet and multimedia to schools
2) Increasing competition to reduce prices and increase consumer choice
3) Advancing the necessary legal framework and expand the use of e-commerce
4) Ensuring high-speed Internet access
5) Facilitating the establishment of a European-wide infrastructure
6) Promoting the availability of risk capital for high-tech SMEs
7) Address the needs of the disabled in the information society
8) Maximising the use of ICTs for health monitoring, information access and care
9) Establishing safer and more efficient transport
10) Ensuring online citizen access to government information, services and decision-making processes (European Commission 2002).

After the Lisbon summit and the informal ministerial conference on the Information and Knowledge Society a month later, the eEurope priorities were clustered around three main aims: a cheaper, faster and secure Internet; b) investment in people and skills; c) stimulation of the deployment of the Internet. An Action Plan was prepared afterwards by the Commission and was endorsed at the Feira Summit in June 2000, setting specific targets to be reached by specific deadlines by the public

administration and the private sector in member states. The objectives of the original eEurope document were superficially modified and acquired the e-prefix: eWorking, eLearning and so on. The actors for each action line were identified, the time frame was set to 2002 (eEurope 2002) and the resulting document was more concrete; a list of indicators was defined to assess the impact of the initiative. In order to achieve the goals, three methods were adopted: building a legislative framework, supporting selected new services and infrastructures, and benchmarking state performances.

The final evaluation of eEurope 2002 took place in February 2003, with high points the increasing Internet connectivity (of individuals, schools and businesses), the establishment of the fastest research network in the world (GEANT) and the availability of basic eGovernment services in the member states; weak points were considered the access gaps between member states and between social groups, the limited used of ICTs by SMEs and the limited digital literacy (Berleur and Galand 2005).

At the end of May 2002, the European Commission released a Communication entitled, 'eEurope 2005: An Information Society for All'. This initiative aimed at providing favourable conditions for private investment, job creation, increased productivity, modernised public services, as well as circumstances for inclusion of firms and citizens in the global information society. In order to achieve this, the plan included two groups of actions: firstly, to stimulate Internet services, applications and content so that by 2005 Europe had modern online public services (e-government, e-learning, e-health), as well as a dynamic e-business environment; secondly, to enable these by improving the underlying infrastructure through the promotion of broadband access at competitive prices and a secure information infrastructure and increased awareness of security matters. The eEurope 2005 action plan also stressed the need to promote ICT skills and ICT-based opportunities, something that has been termed 'e-inclusion' (European Commission 2002).

To achieve these goals the plan outlined four main tools:

a) Policy measures: to review and adapt legislation, to strengthen competition and interoperability, to improve access to a variety of networks and to demonstrate political leadership.

b) Exchange of experience, of good practices and demonstration projects to promote leading edge applications and infrastructure.

c) Monitoring and benchmarking instruments for comparing the performance of each country against the best practices observed across the EU.

d) Co-ordination of existing policies to ensure satisfactory information exchange between national and European policy makers and the private sector (European Commission 2002)

As in 1993 the EU proposals aimed at pushing liberalisation and the introduction of competition in telecommunications so as to promote economic development, in an analogous way the eEurope plans assumed that the development of the information society would boost the telecommunications industry, not least with the development of broadband infrastructures: 'It is worth recalling again that the European Union Policy for the Information Society has been and continues to be an instrument with multiple goals, in particular economic development and development of the telecommunications sector' (Alabau 2004, p.32).

More recently, the European Commission adopted the i2010 strategy, which intends to bring about the necessary regulatory framework for the promotion of ICTs, as well as boosting innovation and development. More specifically, it aims at promoting a borderless information area and an open and competitive internal market for electronic communication and digital services, stimulating innovation and investment in R&D in order to improve competitiveness, as well as deployment of ICTs, and achieving an inclusive European information society with better public services and quality of life. The strategy places great emphasis on public/private partnerships for innovation in ICTs (European Commission 2005).

4.2.4. Discussion

Despite the apparent enthusiasm at the EU level regarding the realisation of an information society in Europe, sceptical voices have expressed concern on a number of levels. Garnham, one of the most vehement critics, analyses the evolution of EU policy from liberalisation, to convergence and eventually to information society, progressing 'from aims of shaping a competitive telecommunications market to bringing into existence a new social order, or at least a new economic order' (Garnham 2004, p.7), namely the Lisbon goal of making Europe the most competitive and dynamic knowledge-based economy. Garnham attacks what he calls 'the consensual vision' of the development of the European information society and knowledge-based economy which will bring social and economic benefits to all: 'the model or concept of the Information Society is at present the dominant way of thinking among academics but also within the corporate and political areas .... It is a model now widely mobilised not just to understand the world but also to change it' (Garnham 2001b, p.1). Likewise, for Duff 'information society policy' is a term 'which is being used as an astute political device for pushing through far-reaching policies covering the whole societal range of economy, culture and polity' (Duff 2004, p.80).

Overall, Garnham sees the EU information society policy as a label for the continuation of the largely failed earlier telecoms industrial policy and as a legitimation of the EU budgets involved. In his opinion, the problems that the information society policies have purported to solve and their relative importance have been far from clear, directed by different interests, different definitions of the problem, ill-selected economic models, methods and theories deployed, the result being a set of conflicting and contradictory policies. He identifies certain points of contention. Firstly, the deployment of competitiveness vis-à-vis the US (and Japan) as the primary rationale behind the development of the overall policy, which he sees as problematic both in terms of measurement and in terms of antagonism in the international arena. Secondly, the centrality of entrepreneurial innovation in the policy rhetoric and the fluctuation of policy between the need to promote innovation in networks and services and the need to advance consumer welfare, which leads to contradictory regulatory structures. Thirdly, the reification of information and

knowledge as a vehicle for productivity, quality of services and market growth, something that is controversial (more information might simply express increased overheads); this he sees as an inflection from the original theory of the post-industrial society (Bell 1973), the latter placing emphasis on human capital as the key source of growth in the service economy (Garnham 2004).

Likewise, Golding sees information society policy at the European level as an expression of the 'obsession to see off competition against Japan and the United States, but with a wholly contradictory double focus on, on the one hand, the need to protect and foster a presumed European culture and, on the other, the need to enhance European industrial and economic progress in the ICT sector'. His realisation is that, eventually, the latter goal predominates, 'as the emergence of the information society is embodied in the imposition of commercial need and corporate strategy onto the remnants of cultural and social policy in the communications field' (Golding 2000, p.170). Golding concludes that EU policy is informed by the US economic libertarian rhetoric, according to which private ownership is celebrated and ICT evolution is coupled with the expansion of the free market.

Overall, the EU information society policy has been mostly market-driven, with emphasis on the economy and competitiveness and limited appreciation of the non-economic aspects (as illustrated by the under-representation of social indicators) (Martin 2005). The regulatory frameworks established have aimed mostly to protect investors (providers of products and services). It has been claimed that the 1993 White Paper was instrumental in the direction of the information society in Europe, the reason being that it identified regulation and protection of the labour market as the cause of Europe's limited competitiveness and pointed towards the direction of liberalisation that dominated the agenda afterwards. Alternative approaches, including the 'people at the centre' rhetoric, seem to have become linguistic exercises, rather than substantial policies.

Moreover, although the European model of the information society with social cohesion and cultural distinctiveness was often invoked in the eEurope context, the actual indicators chosen for benchmarking, as well as and expressions such as 'critical mass', revealed a mechanistic emphasis on the quantitative, rather than a concern

about genuine societal aspects and changes. It seems that the dominant approach (communicated throughout by the Commission) has not been significantly challenged, although national and other influences should not be disregarded. The eEurope plans were linked with the Lisbon agenda, rather than initiating a democratic and citizen- or society-based strategy (Berleur and Galand 2005). Although the techno-economic approach includes expressions such as 'participation' and 'democracy', Europeans are seen mostly as consumers and Europe seems to be falling behind in democratic governance (Antirroiko 2001).

The i2010 continues the previous EU policies based on the Lisbon agenda and the eEurope initiatives. Significantly, it has been based on narrowly conceptualised documents and has been overall seen as an opportunistic mechanism for co-opting and budgeting. It also reveals the continuing influence of various industrial stakeholders (telecoms, IT, service providers), whose business plans have provided the background for a narrow contextualisation of the strategy.

The emphasis on the liberalisation of the telecommunication sector in the 1990s resulted in other issues being overlooked. An explanation for this is that as IS discourses and policies in the 1990s operated in a background of restructuring of the telecommunications landscape, the Commission and the other main actors (in most cases networks of public telecoms operators and related industrial groups) were mostly concerned to reposition themselves in the new arrangements. It was only around the end of the 1990s that a policy network of public and private actors more directly involved in IS emerged and promoted the fostering of the information society in the EU (Jordana 2002).

Overall, 'The European Commission's position in the area of Telecommunications and the Information Society has been ... ambivalent, naturally to the detriment of the Information Society. We must confess that we have never been clear on whether the Information Society development policy has an end in itself or whether it has primarily been considered a means to spur the development of telecommunications, fill networks with content and thus contribute to the consolidation of this sector that was just becoming open to competition. Indeed, the fact that both responsibilities are

in the same Directorate-General and under the authority of the same Commissioner has only served to favour this' (Alabau 2004, p.64).

In broader terms, the information society EU policy has been compatible with the overall market-driven approach to the European project, which has consistently sought economic rather than political integration (Bourdieu 2003). The debate around the information society in Europe has been structured in terms of a series of discourses that guide the EU project at large, which are taken to be of neoliberal orientation and privilege the economic at the expense of social and cultural factors, with resulting implications for the type of information society that will be achieved (Goodwin and Spittle 2002). What remains to be seen is the extent to which the dominant information society vision has been qualified in national strategies and has been challenged by national outcomes.

4.3. From the EU to the national context

In the case of telecommunications, for many there has been a Europeanisation of policy which has exerted pressures on national actors and has resulted in similar telecommunication landscapes (Schneider 2002). For others, however, member states have applied European directives in accordance with their own national goals and policy objectives and national circumstances, although the resulting telecommunication markets bear similar characteristics. The establishment of new regulatory authorities to regulate prices and interconnection charges and to promote competition, for instance, has been a common element; however, their different methods indicate that they have had varying influence in different national markets, an element of variation (Cave 2002). This is the reason why many analysts argue that national governments have retained considerable scope for manoeuvre (Thatcher 2002), including the process through which the former public telecommunication operator has been privatised, the form of the regulatory authorities, and other regulatory instruments (Jordana 2002).

Regarding the time-frame of changes, in particular, there have been different experiences between west Europe and southern Europe, where reservations about privatisation were higher, not least because of different institutional and statist

traditions. The recent democratisation and processes of economic modernisation in these countries created tensions that often contributed to different paths to telecommunication liberalisation, though not necessarily different overall outcomes (e.g. the case of the public telecommunications operator OTE in the Greek context to be discussed in chapter 5). Importantly, there seems to have been a correlation between the readiness of liberalisation of the national market and the subsequent adoption of IS policies, a dimension that is also revealing of national variations (Alabau 2002).

It is also true that the information society has been attractive to national and local policymakers who have seen it as an opportunity for economic and social development. Expectations have included the potential for local businesses and populations to enter new markets and have access to new sources of information and new services, improve access to education and health care in peripheral regions, and reduce social disparities and social isolation (Gibbs 2001).

The EU information society programmes, particularly after the Prodi Commission eEurope initiative of 1999, have indeed mobilised the formulation and introduction of strategic national programmes in almost all the member states (including the new Accession countries). These have included collaboration between business and society, as well as across different governmental departments (Jordana 2002). The EU sixth Framework Programme, with its Information Society Technologies programme (budget around 4 billion Euros) was devoted to the implementation of the eEurope Action Plan, with larger emphasis on social aspects (e.g. social cohesion). Moreover, the development of a complete legislative/regulatory framework (including EU directives on access, authorisation, privacy, universal service and others) has ensured the smooth transportation of policies across the different member states (Berleur and Galand 2005).

As a result, recently there have been certain degrees of convergence with regard to the tone and content of the information society policies adopted, more or less reflecting the common eEurope objectives and priorities; this suggests that structures at a supranational level (mainly the EU, but indirectly political forces and ideologies going beyond the EU level, e.g. the WTO General Agreement on Trade and Services)

have influenced significantly national policy directions regarding the information society. In parallel, the expansion of European professionals exchanging national examples and best practices has led to adoption, avoidance or modification of certain policies in accordance with the international experience.

Placed under the open method of coordination, the eEurope initiatives have been operating under state consensus, i.e. acceptance on the part of the member states of the political commitment to implement it, in cooperation with other states, the European Parliament, the European Commission, the private sector and other actors, according to predetermined schedules and national priorities (Sancho 2002; Sakellaropoulos and Sotiris 2004). For many, the open method has established a reinforced and flexible role for the national government, which can now function through intervention, regulation, enforcement, or as facilitator in new and indirect ways in the context of EU governance arrangements involving national, subnational and transnational entities. For others, it is a liberal form of rule which structures, shapes and evaluates states strategies (Haahr 2004). Indeed, the Lisbon agenda has called for a double transformation of the state: firstly, governmental actors are expected to work with one another in common institutions and operate in a framework of reciprocal learning (and be judged in the process), with a view to greater convergence and interpenetration of governments and public administrations; secondly, states are expected to reorganise internally and achieve greater strategic coordination between their various ministries (Telo 2002).

Still, the implementation of policies rests with the authority and power of the member states. Hay and Rosamond (2002) speak of the 'distinctiveness of the strategic contexts within which rhetorics of globalisation and European integration are deployed' (p.163). Generally speaking, differentiations in the information society are expected, owing to the degree of economic development, the aspirations of different actors involved and the perceptions of the population, the politics, tensions and conflicts involved in the implementation, as well as the overall interaction between market demands and public policies. Moreover, similar frameworks might lead to different translations according to the different state/society traditions in different member states of the EU (Perrons 2004).

4.4. The evolution of information society policy in Greece

4.4.1. Early visions and initiatives

The seeds of an Greek information society agenda in the making can be said to have firstly emerged in the 1980s, when the so-called 'Mediterranean Integrated Programmes' (1983-1993) were at the time the tool for IT funding. In this context, 25 billion drachmas were invested with the intention of 'jumping on' the IT bandwagon.

During this period, mainly universities and research centres but also to some extent the public sector, as well as SMEs became aware of the new technologies. Nevertheless, the narrow conception of most projects as simply procurement of hardware equipment and the overlooking of software applications and of educational needs led to many failures or in any case unsatisfactory outcomes. At the same time, it has been claimed that this short-sighted attitude vis-à-vis the new technologies formulated at this early stage the dynamics of the IT sector mainly towards assembly or retail activities, which in retrospect has been regarded as a missed opportunity in terms of the potential of software development in Greece. Having said that, the initiatives succeeded in introducing IT in key public sectors, namely education, transport, utilities, as well as the stock market and private firms (Papakonstantinou 2005).

4.4.2. Modernisation, Europeanisation and public sector reform in the 1990s

If the imperative of the 1980s in Greece was "democratisation" and the anticipation of a more democratic operation of the public administration under the new PASOK government, the 1990s were characterised by a rhetoric (and practice) of public sector reform in economic terms.

As mentioned in Chapter 3, the 1990s have been dominated by the modernisation project of C. Simitis, who served as leader of PASOK and Prime Minister in the period 1996-2004). Simitis promoted a departure from the previous periods of PASOK governance (1981-1989 and 1993-1996) which had sought to incorporate the segments of the Greek population that had been excluded in the aftermath of the Civil

War, had followed redistributive policies, but had also been held responsible for augmenting public deficits.

Modernisation is of course a very contentious term and one with varying uses and meanings. In Greece, the term has since at least the 1980s become a focal point of discussions of theorists of centre-left orientation. [27] The general criticism of the discourses of modernisation is that there has been in them an attempt to locate in the Greek social formation a modernisation deficit that is overstressed and an imperative need to overcome it so that Greece evolves as a national society. A first problem is that Greece is seen as a deviation from a ideal-typical model with which it should converge. A second problem is that there seems to be confusion between the

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[27] According to Charalambis, for instance, modernisation is taken to mean the capacity to organise a (capitalist/labour) contractual consensus according to rationalist rules within a structured and institutionalised political system (Charalambis 1990). The criticism of this position has been that the aspired rationalism is one that serves the imperatives of the capitalist system concealing social tensions and that a pure rationalist state of affairs is an imaginative construction that underestimates the complexity of social and economic life (Sakellaropoulos and Sotiris 2004).

From another angle, Tsoukalas argues that certain dimensions in the Greek social formation have constituted deviations from an ideal-type of a capitalist system, namely the initial formation of the Greek bourgeoisie abroad (during the Ottoman rule), the overwhelming presence of the state and the ambiguous social and class identity of individuals, which has prevented the formation of clear-cut social classes and social practices. A central position of Tsoukalas is that there is an underdevelopment of collective rational practices, i.e. of collective values and state practices and a parallel development of individualistic practices targeting state mechanisms for individual gains, a reality which makes modernisation hard to succeed (Tsoukalas 1993). Tsoukalas proposes the restoration of objective capitalist rationalities similar to those encountered in western Europe and paradoxically, claims that this is a prerequisite for a subsequent articulation of an anti-capitalist agenda.

In not dissimilar terms, Mouzelis argues that it is in the interests of the working class to follow the capitalist restructuring taking place internationally. He also identifies a reality of incomplete capitalism in Greece, perpetuated by trade union practices which obstruct capitalist imperatives (Mouzelis 1978). Criticism of these positions has claimed firstly that the logic underpinning the argument of Tsoukalas and Mouzelis is one which believes in ideal-types of historical evolution and treats deviations as examples of failure or incompleteness (Sakellaropoulos and Sotiris 2004).

Panagiotopoulou also speaks of a 'capitalist rationality deficit' in Greek society, which emanates from the fact that due to the strong presence of the family the individual cannot successfully become the bearer of individual rights; as a result, there is a lack of objective values and formal and always applicable rules guiding individual and collective action. On the contrary, rules are used ad hoc to serve temporary individual interests, a fact which on a large scale impedes long-term strategic goals, as well as generating distrust against institutions and politics (Panagiotopoulou 1996).

From a different perspective, Diamandouros (2000) argues that Greece has been characterised by a clash between two cultures. An 'underdog political culture', expressed by low middle class, working class and agricultural segments of the population, advocates state protectionism and redistributive rather than productive mechanisms, and adopts usually a logic of individual appropriation vis-à-vis social benefits. On the opposite side, a culture of modernisation believes in the operation of market principles and a strategic role for the state to increase competitiveness.

antiquated or traditional and the modern, with certain modern institutions, such as the welfare state, being seen as obsolete. The traditional/modern schema seems overall to be an oversimplification of more complex structures, ideologies and practices. A further problem is that the particular modernisation advocated has targeted the low-income strata of the population who bear the sacrifice of the need to modernise and rationalise (Sakellaropoulos and Sotiris 2004).

Simitis has himself written extensively (since the early 1990s) on the issue of modernisation, which he subsequently pursued as a political project. To him modernisation involves overcoming both populism and corporatism, going beyond the logic of protectionism and pursuing competitiveness with a new role for the state and the introduction of independent state mechanisms, rationalising welfare structures, departing from the logic of universal access and leaning towards means-tested benefits. Breaking with previous ideological tenets of his party (PASOK), he has presented participation in international political and economic processes (notably the Eurozone) as a national imperative for Greece under conditions of globalisation. In this respect, modernisation is defined as the possibility of progressive democratic governance with (at least some) social protection in an international environment posing a set of inescapable and deterministic conditions (Simitis 1995, 2005; Sakellaropoulos and Sotiris 2004).

Building on the modernisation doctrine, a number of reforms were attempted in the economy and the public sector in the 1990s. Privatisation policies were pursued, notably in the banking sector. Public corporations, which had been functioning as units of absorption of labour, appointed through patronage relations in exchange for votes and political capital were included in the debate about introducing more rational operation using private sector criteria and providing services of higher quality at lower cost. As a result, state intervention was reduced to some extent, while more rational, new public management criteria were introduced, e.g. regarding recruitment and assessment. Nonetheless, government control remained in most public corporations. Such reforms involved a number of social partners, including executives of the firms in question, employees and trade unions, governments and political parties, external consultants, suppliers and the general public. And they often yielded less than satisfactory results, due to lack of leadership and political initiative,

inflexible operating legal frameworks, unsatisfactory proposals, conflictual positions, as well as inadequate social support (Papoulias and Tsoukas 1998).

Decentralisation reforms, informed by the rhetoric of a 'lean' state contributed to a redistribution of power between central and local government, with second-tier (prefecture) local government replacing the prefects (which were politically appointed by central government), as well as the compulsory merger at the first-tier of local government (municipalities), which used to be fragmented and powerless. Further, a number of independent authorities were created, including the Ombudsman (1997), the National Broadcasting Council (1989) and the Independent Authority for the Selection of Personnel (1994). Other authorities were created to regulate the liberalised utilities markets (energy, telecommunications). These were the result of the implementation of EU policies, were informed by the new public management doctrine and were seen as a solution to bureaucratic problems. Significantly, these authorities have not attacked the Greek bureaucracy, but have rather operated in parallel, with more flexibility, autonomy, resources and modern management methods (Spanou 2008).

4.4.3. Liberalisation of telecommunications

Under these circumstances, the main development related to ICTs in the 1990s in Greece (as in most EU countries) and the first major step towards the implementation of the information society was the liberalisation of the telecommunication sector. Until the late 1980s the telecommunication sector had been based on a state monopoly in the provision of telephone and telecommunication services. In the wake of the early EU information society documents, where ICTs were articulated as providing new opportunities for growth and investment, as well as the general realisation of the poor performance of the public telecommunication operator (OTE), the Greek governments engaged in the gradual liberalisation of the sector.

The deregulation of value-added services and mobile telephony services was enacted by Law 1892 in 1990. Subsequently, Law 2075 of 1992 served as a framework for the partial opening of the market, since it determined the provision of mobile telephone services by private operators (OTE was excluded). Following a public tender, two

mobile telephony licenses were granted to STET Hellas S.A. and to Panafon S.A. Law 2075/92 also established the Hellenic Telecommunications Commission (EET), an independent regulatory authority intended to supervise and regulate the liberalised telecommunications market (which started operating in the summer of 1995).

In 1994, Law 2246/94 replaced Law 2075/92 and initiated the liberalisation of all telecommunication services, apart from voice telephony and provision of the telecommunication infrastructure, both of which remained with OTE. [28] Furthermore, this law enacted the full liberalisation of mobile telephony, allowing OTE to compete as well[29], while it also determined the responsibilities of the ministry of transport and communications (OECD 2001).

Since the adoption of Law 2668/98, providing for the organisation and operation of the postal services sector, EET was also allocated the supervision and regulation of the postal services market and was renamed Hellenic Telecommunications & Post Commission (EETT). EETT is an independent and self-funded institution aiming at promoting the development of the two sectors, safeguarding competition in the relevant markets and protecting the interests of the end users.

Subsequently, a new telecoms Law (2860/2000), replacing Law 2246 was passed by the Greek Parliament in December 2000. This new Law had five objectives: a) to protect the consumer b) to safeguard competition c) to safeguard personal information d) to ensure provision of universal service e) to ensure the growth of telecommunications (OECD 2001). EETT's supervising and regulatory role was further enforced by Law 2867/2000.

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[28] While the EU deadline for full liberalisation in the provision of voice telephony and the associated network infrastructure was 1 January 1998, in 1996 the Greek government together with OTE requested an extension until 1 January 2003 on the basis of the need of OTE to complete its modernisation programme. This request can be seen in the national modernisation policies mentioned above. An extension was granted until 31 December 2000; after that date all restrictions on the provision of voice telephony and the network infrastructure were removed.

[29] OTE indeed entered the mobile telephony market in April 1998 with its subsidiary company COSMOTE.

4.4.4. The 1995 White Paper

The first policy document regarding the information society in Greece was a White Paper titled 'The Greek Strategy for an Information Society: A Tool for Employment, Development and Quality of Life' (1995), which was presented in 1995 by the then Minister for Industry, Research and Technology (Simitis himself at the time) and raised four goals to be pursued within the following 10-15 years. Specifically:

a) to limit the gap between Greece and the other EU countries in the use of advanced ICT infrastructure within 10 years
b) to ensure that a considerable proportion of Greek firms would have access to markets associated with the information infrastructure within 15 years
c) to ensure that family units increasingly have access to the information infrastructure within 15 years
d) to see that the greatest part of transactions with the state be carried out electronically within the following 15 years (Hellenic Republic 1995).

This first document served as a means of setting the information society agenda in the Greek context. It echoed the discourse of opportunity associated with the new technology, as well as the dangers of being left behind, and it presented the whole issue as a great challenge for Greece.

The 1995 White Paper was mainly concerned with the inadequate national infrastructure, which limited electronic transactions and access to new products and services both for firms and for households in comparison with the other EU countries. In this respect, it was mainly orientated towards limiting the technological gap, rather than being preoccupied with elaborating the social and cultural implications of the information society (Constantelou 2001). A number of actions were proposed to pursue these goals, namely the development of a national infrastructure backbone, the establishment of a parliamentary committee to deal with the information society, the development of information networks for firms, the introduction of electronic transactions in public administration.

Most of the actions were funded by the 2nd Community Support Framework (CSF). The operational programme Kleisthenis (1994-2000) run by the Ministry of Interiors,

Public Administration and Decentralisation and with a total budget of 100 billion drachmas was the main information society initiative. The central aim of the programme was the modernisation of public administration (both in terms of hardware procurement and regarding services and training of employees), under the auspices of the Ministry of Interiors, Public Administration and Decentralisation and that of Economics. The programme adopted an integrated approach to IT, including development of infrastructures, applications and training in the design and implementation of each separate project. In the case of large projects, project management was supported by large consultancy firms. Information systems for municipalities, fiscal administration (the TAXIS project), the stock market, customs, as well as training of public administrators were some of the basic initiatives.

In parallel, the digitisation of the OTE network, something that had been on the agenda since 1977 and had been finally decided in 1990, the development of certain fibre optic rings and the creation of the national network for research and technology EDET[30] were important initiatives at the level of telecommunications infrastructure. During this period a small number of IT firms of significant size developed, the IT sector was consolidated and entered the Athens stock market in the end of the 1990s (Papakonstantinou 2005). Overall, it is important to note that there was early on a recognised need to introduce IT in the public sector, though some aspects of it were overambitious at the time (e.g. the prospect of manufacturing hardware in Greece).

4.4.5. The 1999 White Paper

In April 1999, with Simitis as prime minister, a second White Paper was prepared by a group comprising ten academics, policy experts, experts from the private sector and public administrators, some of whom had been involved in the operational programme

[30] EDET is a national infrastructure linking universities, technological institutes and public research institutes, which involves knowledgeable university groups and is supported by the General Secretariat of Research and Technology of the Ministry of Industry, Research and Technology. EDET is also the relevant SA, with the Greek state as its sole shareholder, having as a mission the provision of fast Internet to the Greek academic and research community, as well as the promotion of ICTs in Greek society and in SMEs in particular. It comprises a department that manages e-business projects (provision and development of services for electronic business activity) and a second department that deals with research and development of infrastructures. It takes part in European projects, with a particular emphasis on the Balkans and southeastern Europe (SS 2005).

Kleisthenis[31], based on international experience and feedback from the ministries regarding the actions and steps that had been taken vis-à-vis the information society. This was more strategic and comprehensive and was titled *Greece in the Information Society: Strategy and Actions*. It declared the following:

'Information and telecommunication technologies change rapidly the way we work, play, communicate, and transform the bases of economic competition. They constitute a tool for the modernisation of the state and the competitiveness of enterprises, while creating new ways of work, new skills, and the need for continuing learning and adaptation of the education system. At the same time they allow the provision of better health, welfare, and environmental services, and contribute to the promotion of our cultural heritage and the Greek language. The government's concern is to ensure that the emerging Information Society will be a society for all, without discrimination between information haves and have-nots, and while safeguarding citizens' rights and the freedom of expression and information. The overall government strategy for the Information Society is based on some basic principles: equal opportunities and access for all, the creation of an environment that is conducive to entrepreneurship and innovation, and safeguarding of personal freedoms and of the operation of democratic institutions' (Hellenic Republic 1999, p.5).

From the outset, the rhetoric celebrating the potential of ICTs for competitiveness and better public services, present in the early EU documents, was prominent, together with the requirement of building human skills to take advantage of these opportunities. The imperative of universal access and the prevention of new types of social exclusion, reminiscent of similar concerns in EU documents, were also emphasised. In parallel, a particular character of the Greek information society was envisaged, one involving the promotion of Greek culture and language.

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[31] The Kleisthenis experience fed the 1999 White Paper. For instance, a report about processes in the public sector that demanded interoperability and cooperation informed a survey, through which the sources of information that could be digitised in an interoperable way were identified and incorporated in the White Paper. As the president of the programme recalled, an important fact was that the then Finance Minister was interested in the experiment, though he did not understand the technology (SP 2006).

The requirement to adapt to new imperatives by advancing regulatory reform and broad institutional changes was time and again stressed in the White Paper: 'The changes that technology brings with it put to the test the adequacy of existing laws and impose their re-orientation from the institutions of the industrial society to those of the Information Society' (ibid., p.7). Again, the rhetoric of radical, qualitative shift to a new epoch reminded of the deterministic tone of the early EU documents, as well as the inadequacies of existing institutions to accommodate these transformative effects of new technologies. However, new technologies were also referred to as a 'tool' to achieve certain objectives.

The information society was defined in a way to highlight the potential benefits for Greece:

a) in terms of transparency and democracy, which presented opportunities for modernisation of the public administration
b) in terms of the increasing reliance of the economy on the generation, distribution and use of knowledge and information, something that provided opportunities for equal participation in the global marketplace for smaller countries
c) in terms of new types of employment, new skills, flexible employment structures, lifelong learning and education, something that could suit to the long-standing education ambitions traditionally encountered in the Greek family
d) in terms of quality of life, including better health and welfare services, better and safer transportation, conservation of the environment, preservation of cultural heritage, all domains in which Greece had to a smaller or larger extent traditionally suffered.

In parallel, certain aspects of the Greek society and culture that could contribute to the passage to an information society were also to be taken advantage of: resourcefulness and willingness to take risks, finding solutions through experimentation, or deploying young people enthusiastic about technology within the family in order to overcome the technophobia of the older generation.

The bottom line was that 'In the emerging Information Society, Greece has a unique opportunity to upgrade its position in the global economy and to improve the quality of life of its citizens' (ibid., p.8) and that 'the largest benefits will go to societies that

will be first in putting the new production tools to use for improving the quality of life of their citizens and their position in the international economic and political environment' (ibid., p.10).

On the other hand, the opportunities presented were accompanied by great challenges to which the Greek state had to respond in order for benefits to be materialised:

a) modernisation of the economy, largely focused on traditional manufacturing and services, with notable lack of research and investment in new products and process innovation, low rates of technology diffusion and a small ICT sector, single-product industries in many sectors and geographical fragmentation, all of which were taken to inhibit development
b) more dynamic macroeconomic policy and structural interventions in the capital, labour and product and service markets so as to enhance investment, growth and employment in new technologies
c) initiatives to reform the operation of public administration, seen as a major impediment to the implementation of the information society, since obsolete structures, bureaucracy, lack of planning and staff, lack of feedback mechanisms prevented the assimilation of ICTs and the improvement of service provision
d) acceleration of the creation of appropriate telecommunication infrastructures under conditions of deregulation and a flexible regulatory framework supervised by the state
e) state interventions in the domain of education and vocational training in order to supply both material infrastructures and suitably qualified human resources with new skills and adaptability

The role of the state was consequently given prominence, in contrast to the EU documents. The role of the private sector was also considered very important in terms of investment in new products and services and in the generation of growth and employment. As a result, the provision of a suitable environment for entrepreneurial activity was of capital significance. The implementation of the information society measures required co-operation between the public and the private sector, firms and professionals active in the domain; it also proclaimed that the shape of the information society would depend on how actively citizens participate in its formation. For the

implementation of the strategy, interventions were foreseen at the organisational level (restructuring of IT services in the public sector, improvement of the legal framework for public IT projects), the regulatory level (reinforcement of regulatory bodies, reviewing of support mechanisms, improvement of evaluation procedures), as well as the executive planning and follow-up (Governmental Committee for the Information Society under the Prime Minister and the establishment of an Informatics Board made up of public and private sector representatives). Finally, the establishment of an Observatory for the Information Society was foreseen so as to transfer relevant knowledge and practices from international experience.

The 1999 White Paper set out a multitude of information society goals (Table 4.1). The paper was a quite broad policy document, without specific focus on certain actions. Its main influences were the French and the Portuguese strategies, the latter because of the south European similarities between Portugal and Greece. Moreover, while it echoed some aspects of the early EU documents, it reflected a wider concern about social implications and was relatively tuned into the Greek reality, rather than merely repeating generalisations about the information society. It also echoed the political will from Simitis to push IS issues, despite the overall limited awareness of such issues at the time. Still, it took a whole year for it to be approved by a government committee. Although political will was present, the information society was not a high priority at the time, and kept being put behind (GP 2007). In any case, the advent of the 3rd CSF and the launch of the eEurope initiative at the end of 1999 enabled the design of a more detailed information society approach.

Open and effective government

Modernisation of public administration and improvement of state-citizen and state-firm relations through the extension of present and the implementation of new IT systems; digitalisation of information, creation of databases, electronic information exchange, creation of a networking environment in public administration, common standards in implementation procedures.

Education

Changes in education to accommodate the requirements of a 21st century knowledge-based society; familiarisation of students with computers and multimedia at all levels, teacher training in ICTs, creation of local IT labs, connections of schools to the Internet, production of digital education packages, improvement in infrastructure connecting universities and research centres.

Economic development and competitiveness

Taking advantage of the ICT potential in the economy: interventions in the product, labour and capital markets, initiatives for the upgrading of the IT industry, support for SMEs; establishment of an appropriate regulatory framework for e-commerce to create a climate of trust and protection for consumers; measures to promote e-commerce applications in the private sector; support for industrial innovation through cooperation incentives to enterprises and research entities.

New jobs, new skills, new work arrangements

Government initiatives to facilitate employment opportunities in emerging sectors and to address the decline of job opportunities in specific sectors/professions through redeployment programs and revival of stagnating sectors; life-long training programmes for young people; promotion of new work arrangements such as teleworking through diffusion of best practice, amendments of the legislative framework, promotion of pilot projects in the private and public sector, development of tele-centres in remote areas.

Better quality of life: health, welfare, the environment, transport

Introduction of IT systems in hospitals, training of health personnel in new technologies, introduction of tele-medicine applications (including measures for the safety, confidentiality and reliability of tele-medicine services), development of unified electronic patient files; application of telematic services for the documentation and protection of the natural environment; better management of traffic systems, development of a unified online electronic reservation system for coastal navigation.

Greek culture

Taking advantage of the capabilities of ICTs and multimedia for protecting Greek cultural heritage, promoting Greek cultural content, supporting artistic creation through ICTs, reinforcing the Greek language, cultivating contacts with Greek communities abroad, preserving Greek identity.

Mass media

Creation of an appropriate regulatory framework to take account of the changes in communication brought about by digital cable TV, the Internet, electronic printing; encouragement of entrepreneurial activity, provision of subscription-based TV, protection of freedom of expression and citizens' rights, reinforcement of the role of regulatory entities.

Equal participation of the regions Strengthening the communication infrastructure throughout the country in order to grant universal telecoms service and broadcasting coverage; promotion of new tele-services (for work, medicine, education, transactions), promotion of local firms in information science, telecommunications, education, development of on-site services to the public (electronic service centres); local implementation of centrally designed initiatives (e.g. land use register, property register); support and participation of local communities throughout and respect for local particularities. **National telecommunications infrastructure** Development of a national telecommunications infrastructure for widespread provision of advanced telecommunication and audio-visual services by the public and private sector at low cost; design of a regulatory framework, initiatives for the establishment of costing arrangements, the financing and implementation of universal service, the formulation of competition rules (as to interconnection, numbering, licensing and spectrum management) and the supervision of their implementation. **Protecting the rights of citizens** Legislative and regulatory initiatives for the protection of the rights of citizens (access to information, protection of private information), the protection of consumer rights, intellectual property issues (copyright, digital exploitation), legal aspects of electronic transactions (validity, identification of digital signature, encoding); labour and insurance legislation for tele-work; criminal activity in cyberspace, unlawful and unethical Internet content.

Table 4.1: Aims and objectives of the Greek information society
Source: Hellenic Republic 1999

4.4.6. The Operational Programme for the Information Society

Following from the White Paper, through the eEurope initiative and the Feira Summit of June 2000, the Greek government proposed a systematic Operational Programme for the Information Society (OPIS), linking it to the structural funds within the 3rd European CSF[32]. This was an innovative horizontal programme, with a budget of 2.8 billion Euros, of which 2.27 billion was public funds (about 25% national and 75% from the European Regional Development Fund and the European Social Fund) and the rest came from private funding.[33] The OPIS was approved and launched in spring

[32] The CSF Programme for Greece consisted of seven operational programmes, namely Improvement of Human Potential, Transport, Competitiveness, Agricultural Economy and Fishery, Quality of Life, Information Society, Regional Development. These were funded at 75% from national and EU funds. The OPIS developed synergies with actions of other programmes.
[33] IS was presented as one of the basic policy pillars, rather than as part of other large policy areas; this is the reason why it attracted so much funding.

2001 with an implementation time-frame until 2008 (Caloghirou and Constantelou 2006). It operated across ministries, involving a number of government departments, but also educational institutes, firms and other actors, and aiming to implement the essential features of the White Paper.[34] Overall, its objective was to create a 'critical mass' of networks, information systems, services, digital content and human resources related to the information society, which would have multiplying effects in the economy and society by increasing the demand for ICT services (YC 2008). The first IS Secretary, who was also the head of the team designing the OPIS, recalled: "*Our programme was very ambitious and unique in Europe in terms of the scale of funding; I used to go and present it around Europe as a case study of how you can prepare something ambitious in order to push something that you consider of prime importance. Operationally and politically it was used as a model and this was acknowledged by the European Commission which supported us very much*" (GP 2006).

The OPIS aimed to achieve two main targets over the period 2000-2006: a) to provide better services to the citizen and improve the quality of life through the deployment of ICTs in public administration, health and welfare, transport and the environment; b) to promote development and build human potential through actions to increase competitiveness and employment and to put into place a suitable educational system (Constantelou 2001). To do so, it set out the following five lines of action (shown with the corresponding shares of the total national and EU funding):

- Education and Culture (17%)
- Citizens and Quality of Life (37%)
- The Digital Economy and Employment (24%)
- Communication Infrastructures and Services (19%)
- Technical Assistance (3%)

[34] The White Paper included one last chapter which referred to implementation issues; this comprised a series of specific policy proposals of operational nature, which dealt with how the programme would become part of, firstly, the government and then society.

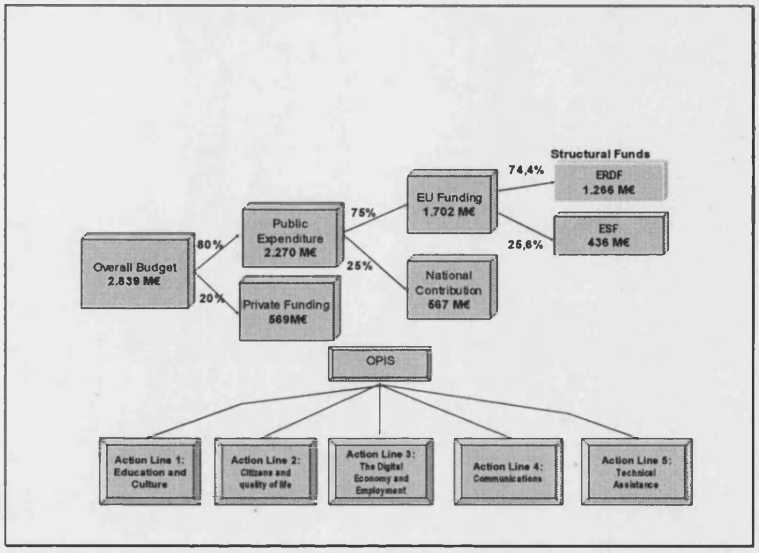

Figure 4.1: Funding and structure of the OPIS

Source: Caloghirou 2003

More specifically, the breakdown for each action line was as follows:

Education and culture

- Equipping all schools with the necessary IT, network and audio-visual equipment, creating or upgrading IT labs in universities and colleges.
- Establishing access to the Internet and multimedia resources by all Greek schools by the end of 2001 and a complete Intranet for the education system by 2006.
- Infrastructure development for tele-education for teachers and students throughout the country.
- Training of all teachers in the use of Internet and multimedia resources as an educational tool
- Creation of public Internet access points to ensure the access of youth to the Internet in less favoured areas.
- Administrative documentation and management of Greek cultural heritage, development of digital content and Internet resources with Greek cultural content
- Support of new forms of cultural expression that use IT-based media.

Citizens and quality of life

- Improved quality services to citizens and firms by the central, regional and local public administration
- Development of on-line applications, as well as use of ICTs to streamline and re-engineer procedures and communication within and between government departments, covering all of public administration (notably the fiscal, finance, social insurance, justice, regional development and emergency services domains)
- Use of ICTs in view of public sector modernisation; training of public sector employees in new technologies and organisational methods
- Creation of geographical and environmental mapping and management information systems, linking central to regional and local government
- Use of ICTs to implement a comprehensive strategy for higher quality health and welfare services provision to all citizens and for the reform of the management of the health sector
- Introduction of telematics applications in land, sea and air transport

The Digital Economy and Employment

- Encouragement of the use of ICT applications by SMEs (in the primary, secondary and tertiary sector) in order to increase their productivity and competitiveness
- Developing infrastructure support for e-businesses (providing certification, prototyping, networking and information services)
- Improving conditions for high-tech business startups through the development of venture capital, incubators and other mechanisms
- Improvement of university-industry links through the support of partnerships between research and private sector entities
- Creation and dissemination of digital content and information (databases, libraries and so forth) relating to research needs
- Development of basic IT skills for the wider population, especially for socially disadvantaged groups, in connection with re-employment programmes
- Reduction of the existing gap between supply and demand of highly skilled professionals in the ICT field
- Promotion of employment by combined training and employment actions concerning the acquisition of working experience in ICT firms (trainees)

- Support of tele-work and tele-training pilot applications, especially in geographically remote areas

Communication Infrastructure and Services

- Measures to enhance the liberalisation process in the telecommunications market (e.g. spaces for antennas, equipment for frequency spectrum management)
- Development of local-access network infrastructure in accordance with local needs in small towns and remote areas
- Support of the development of broadband services for the public sector combined with special actions for the elderly and the disadvantaged
- Provision of access to people in less-favoured regions by using the existing postal agencies in remote areas as ICT access points

(Ministry of Economy and Finance 2000).

The White Paper and subsequently the OPIS took into consideration the international and European developments and tendencies, together with the requirements at the level of policy of different ministries. The basic actors were and have since been more or less the same: two ministries, namely the Ministry of Economy and Finance and the Ministry of Internal Affairs (subsequently Ministry of Internal Affairs, Public Administration and Decentralisation), have been mainly allocated the responsibility of the running and supervision of the programme, in accordance with the guidelines of the eEurope initiative and the eEurope Action Plan of the Feira Summit. The Ministry of Development and the Ministry of Education were also involved, and to a lesser degree the Ministry of Health, the Ministry of Agriculture and the other ministries.

It is important to note that the OPIS assumed a significant role for the state in the implementation of the information society policy. The state was seen as a major user of ICTs, notably in the development of infrastructures and the provision of services to citizens, including education, health and public administration. At the same time, it was considered responsible for the development of the necessary institutional framework and the promotion of the information society project in the Greek economy and society (Leandros and Iosifidis 2003).

4.4.7. The "Digital Promise" proposal

In 2004 a new information society proposal was submitted by the Special Secretariat for the Information Society so as to revisit and update the initial 1999 White Paper. This proposal, entitled "Digital Promise", aimed at capturing the experience of the preceding 5-year period and setting the priorities for the information society strategy for the period 2004-2008. In a nutshell, it reflected the conviction of the OPIS authorities (particularly after 2002) that IS policy should aspire to digital convergence as a vehicle for real convergence with other EU countries (YC 2008).

The opening paragraph of the executive summary of the "Digital Promise" document reads: 'Our vision is development with employment and welfare for all. It is to create the conditions for all to take advantage of the opportunities in the new Greece that we together are creating and to contribute to the elimination of insecurity in citizens, and particularly those who are weaker financially, the socially excluded. Development for all, with social cohesion and respect to the environment' (Special Secretariat for the Information Society 2004, p.4).

Notwithstanding the quasi-partisan political rhetoric, it is clear from the beginning that social issues and social cohesion were, at least in language, quite high on the agenda. This reflects the Lisbon Agenda as far as the keywords used are concerned (development, employment, social cohesion), but the social issues here seem to be elevated at a higher level. The second paragraph reinforces this impression by stressing that 'Information Society is primarily society', which derives from the experienced contemporary social transformation with ICTs as the 'motor' of change. Here a slip to the language of technological determinism can be observed; this is then followed in the third paragraph by the assertion that digital convergence is a prerequisite for economic convergence in the Greek society, a statement with echoes of technological determinism, but with social concerns at the same time. From this, a call for political parties, but also institutions overall and sectors is launched to take part in a long-term 'summon' (p.4).

Essential factors for the success of this social transformation taking place in society are listed as follows: commitment at the highest level of decision-making and

administration in the context of a well-defined strategy, the formation of human networks and knowledge clusters, as well as the necessary administrative and organisational adaptations.

A declared basic principle of the "Digital Promise" is that when the information society is accompanied by 'digital solidarity' and 'universal participation', it is a crucial factor for growth and the stability of the welfare state. The influence of the work of Castells and Himanen (2002) on the relationship between the information society and the welfare state in the Finnish case is clear, though this relationship is not as uncontroversial as presented in this work (Patomäki 2003). What is more important, though, is the emphasis placed on universal participation, through the development of infrastructure, services and applications, which will augment development, employment and education and will ensure a 'twofold role for the citizen: social and economic mobilisation and active participation in the implementation of the Information Society for All' (p.5). The influence of the eEurope documents is obvious in the language, but again there is a twist in the stress placed on citizen contribution, possibly with bottom-up procedures in mind and through the use of open-source software, which was becoming important at the time in the circles of the designers of the proposal (TP 2005).

The need for a 'critical mass' is subsequently invoked in this context, echoing again the language of eEurope. This includes broadband infrastructures: a goal is indeed broadband access for all (language of universality) schools, hospitals, libraries, municipalities and public administration until 2008, so that citizens have quick and cheap Internet (the emphasis on broadband reflecting the eEurope 2005 priorities). Following from this, the reference to services and content reiterates the vision of a human-centred information society, with equitable access to basic services and operational structures (education, employment, health, entertainment). Then the text makes reference to public administration, where the imperatives are the promotion of democratic functioning and transparency, as well as the improvement of services to citizens and firms.

Next, the discussion switches to firms, innovation and development, which is taken to mean not only a process of quantitative growth, but a 'broader process of

enhancement of citizens liberties and rights, including access to information' (p.6). The rhetoric of modernisation creeps in at the point where ICTs are said to provide new investment opportunities and to offer flexibility in the organisation of employment and thus strengthen the productivity of businesses. However, it seems that the issue discussed (p.7) is innovation (including new products and services, new markets and new employment places) and innovation policies aimed at contributing to productivity and improvement in the quality of citizens life (a reference to the goals of the 1999 White Paper). Significantly, the participation of citizens is invoked again in the context of a dialogue to strengthen multi-ethnic and multi-cultural Greece and its contribution to international information networks.

Incorporating the unavoidable language of the centrality of ICTs, the discourse of opportunity of the information society, and the challenges of reform, education and adjustment, but also going beyond them and clearly indicating a preoccupation with goals with certain social and societal content, the "Digital Promise" was overall a more mature proposal than any text preceding it. Moreover, it was more citizen-oriented than similar documents at the European (and Greek) level, both in terms of opportunities for all, and in terms of active citizen participation in the evolution of the Greek IS. A phrase that perhaps conveys its philosophy is the following: 'Many of the choices in the context of the Information Society are to all intents and purposes of political nature and are not technologically determined. These decisions are consequently taken more solidly by citizens familiar with the use of new technologies' (p.8).

4.4.8. The 2006-2013 Digital Strategy

The "Digital Promise" proposal did not have the opportunity to get parliamentary approval, as the March 2004 elections brought in power a new conservative government, which at least in appearance placed the information society high in the political agenda. In June 2004 an IT Committee was set up and in July 2005, a new strategy was introduced for the period 2006-2013, namely the "Digital Strategy", which purported to push the information society agenda further. The Digital Strategy was a collaborative effort involving various user groups, public sector agencies, experts, directors and high-rank officers of ICT firms, and associations such as SEPE

(YL 2005). Its declared aims were citizen and business mobilisation so as to take advantage of their potential, as well as reinforcement of social structures and provision of new opportunities in education, health, entrepreneurship, employment and culture (Observatory 2008a).

This new strategy has been linked to the new operational programme "Digital Convergence". The strategy and the operational programme comprise nine so-called "threads": 1) digital knowledge, which involves actions to improve knowledge accessibility, digitisation, and availability; 2) digital consumption of public and private electronic products and services by citizens; 3) digital protection of the natural environment and energy-saving actions; 4) digital security and improvement of citizens' trust in digital products; 5) digital job-seeking services and enhancement of employment through new technologies; 6) digital services for quality of life, including entertainment, culture, sports and health; 7) digital participation of under-privileged or excluded groups; 8) support of extrovert entrepreneurial activity outside Greek borders; 9) specialised technological activities to highlight local characteristics that constitute particularities or advantages of a region (Ministry of Economy and Finance 2005).

Although purporting in rhetoric to produce a radical change, the new strategy and the associated operational programme seem just to have rephrased, without significantly changing, the orientation of the information society in Greece. As the results of "Digital Convergence" can only be assessed in the next few years, this thesis focuses on the OPIS as the main tool for promoting the information society in Greece and for which an assessment is now possible after the end of its implementation time-frame in 2008.

4.5. The evolution of basic information society indicators in Greece 2000-2008

A number of limitations in using information metrics have frequently been documented: they are based on a separation between what is informational and what is not and between the online and offline activity, something which in reality is much more blurred; they are not underpinned by a theoretical background addressing the qualitative differences that cannot be captured by simple information indicators; they

are based on the aggregation of large geographical areas, e.g. at the national level, something that conceals significant differences between regions and groups; they are centred around the individual (and not a group), something which misses the implications of individual usage for the group where the individual belongs; last, but not least, they are produced by and target the techno-political and policy-making elites, and possibly certain academic and civil society representatives, while the citizens just fill in questionnaires and continue to have limited understanding of ICT developments (Menou and Taylor 2006).

Keeping in mind these limitations, in what follows, we present a snapshot of the information society in Greece by drawing on a set of metrics with the intention of getting a rough idea of the current IS situation in Greece and compare it to the EU average. To the extent possible, we back these indicators up with non-numerical information regarding ICTs in key sectors of the economy and the society. Nonetheless, this sketch is only intended as context for the in-depth qualitative evidence and its analysis, presented in chapter 5.

4.5.1. Individuals and Households

Table 4.2 shows a series of indicators of ICT diffusion in Greece in 2000, when the OPIS had just begun; Greece was significantly behind the EU average in ICT infrastructure and use, with the exception of fixed and mobile telephones.

Indicator	Greece	EU-15
Telephone lines per 100 inhabitants	54	54
cellular mobile subscriptions per 100 inhabitants	56	63
personal computers per 100 inhabitants	7.1	28
Internet users per 100 inhabitants	9.5	24.6
personal computers per 100 teachers*	61	134
personal computers per 100 students*	8	11

* January 2002

Table 4.2: Some measures of ICT diffusion, Greece and EU-15 (2000)

Source: Eurostat 2003

Table 4.3 shows an increase in PC and Internet usage for individuals and PC and Internet possession for households between 2001 and 2003, but this increase cannot be characterised as a take-off; on the contrary, falling rates were observed between 2003 and 2004 and household intentions to buy a PC and to connect to the Internet were dropping significantly. Moreover, the 2004 Internet usage (roughly 20%) was still far behind the 2004 average for the EU-15 (50%) or even for the EU-25 (47%).

After 2004, there is a stable increase in most of the indicators of the table, but this has to be seen as a 'natural' evolution, also assisted by the large operational programme which has overcome the costs of its initialisation period and has begun to bring about results.

Indicator	2001	2003	2004	2005	2006
% population 16-74 using PC	20.8	27.1	25.9	35.4	38
% population 16-74 using Internet	10.6	19.9	19.7	23.2	29
% population 16-74 using Internet weekly	-	-	-	17.9	23
% population 16-74 using Internet to interact with public authorities	3.5*	6.1	7.2	4.7	9
% households having PC	23.3	30.5	29.9	39.4	41.7
% households having Internet access	12.4*	15.2	17.1	22	23
% households having broadband connection	-	1	1	1	4
% population having mobile phone	49.5	64.7	69.4	85.6	-

*in 2002

Table 4.3: Evolution of basic IS indicators in Greece 2001-2006

Source: EDET 2004a, Eurostat 2007, Observatory 2008a

In 2006, the final year of the 3rd CSF, Greece presented the lowest percentages in the EU-25 (including the new EU accession countries) in Internet usage at least once a week by individuals (23% compared to 47% for EU-25) (Figure 4.2) and Internet access by households (23% compared to 51% for EU-25) (Figure 4.3).

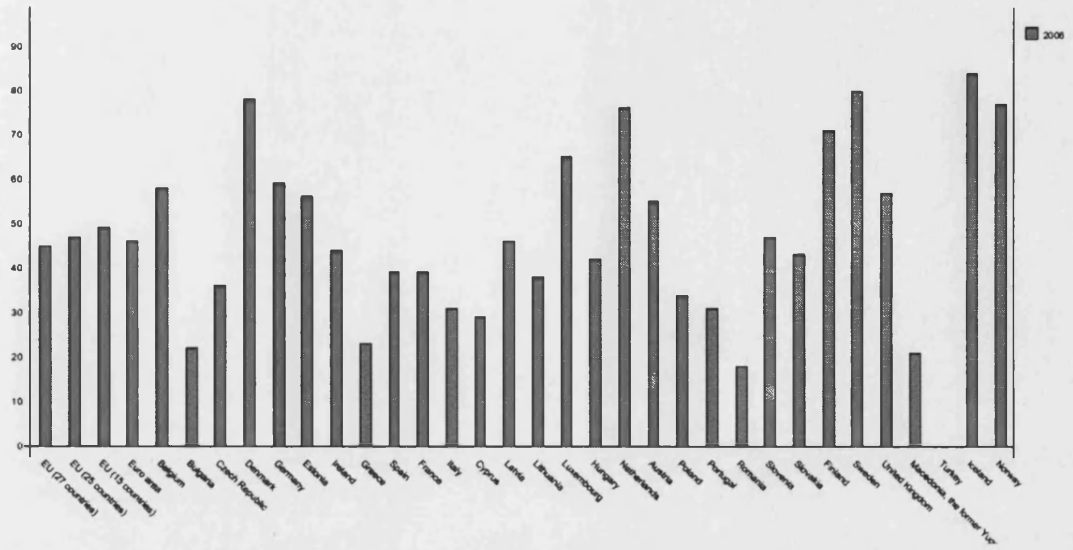

Figure 4.2: Share of individuals regularly (once a week) using the Internet (2006)

Source: Eurostat 2007

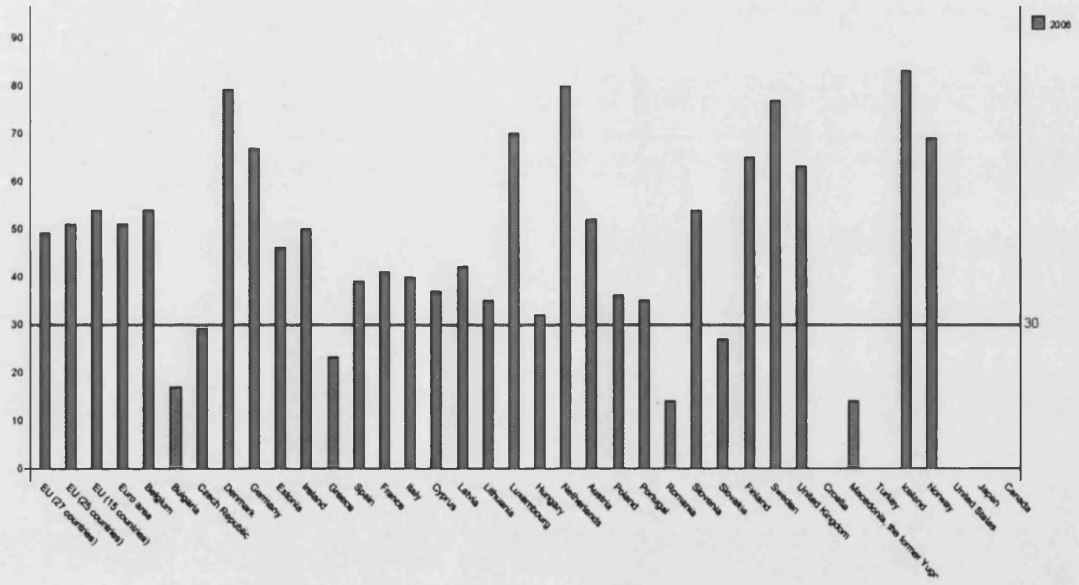

Figure 4.3: Share of households having Internet access (2006)

Source: Eurostat 2007

Although the support of investment towards broadband infrastructures was one of the fundamental priorities of the OPIS, in 2004 less than 1% of households were connected with broadband, by far the lowest percentage in the EU-15 and among the lowest even in the EU-25. In 2006 broadband Internet access by households was 4%, the lowest percentage even in the EU-27 (i.e. including Romania and Bulgaria), while the EU-27 average moved from 23% in 2005 to 30% in 2006 (Eurostat 2007).

After 2006 there has been a stable increase in the basic indicators. However, this has to be seen in comparative perspective, i.e. regarding other EU countries. Table 4.4 shows some basic indicators for the years 2006-2008. In almost all of them, the increase rate for Greece is slightly lower than the equivalent increase rate for the EU-27; this is significant, as it suggests that Greece is not yet on the way to digital convergence with the EU countries. Broadband availability in households shows improvement from the very low figure of 2006 (4%) to that of 2008 (13.4%), which is attributed to the implementation of the electronic communications legal framework (including the strict imposition by EETT of the regulation for the unbundling of the local loop) and the "Broadband Action Plan" that used structural funds to extend coverage (total DSL coverage increased from 9% in 2004 to 88% of the population in 2008 and in rural areas from 0 to 55%) (Eurostat 2009). Nevertheless, household broadband connections are still low compared to the EU average.

Further, certain indicators (e.g. interaction with public authorities, weekly and daily Internet usage) are consistently the lowest in the EU-25 in the period 2006-8; likewise, the 'never used Internet' indicator has consistently been the highest in the EU-25 in the same period.

Indicator	EU-27 2006	GR 2006	EU-27 2007	GR 2007	EU-27 2008	GR 2008
% population 16-74 using PC	59	38	63	40	-	-
% population 16-74 using Internet almost daily	31	13	38	19	43	23
% population 16-74 using Internet weekly	45	23	51	28	56	33
% population 16-74 using Internet to interact with public authorities	24	9	30	12	28	10
% population 16-74 never used Internet	42	65	37	62	33	56
% households with broadband	30	4	42	7	49	13.4

Table 4.4: Evolution of basic IS indicators in the EU-27 and Greece 2006-2008
Source: Eurostat 2009, Observatory 2008a

Furthermore, in 2007 the overall Internet use in the Greek population presented certain digital divide patterns in terms of sex, age, educational level and geographical location:

i) The 36.1% for men was contrasted with 24.4% for women.

ii) Very low use was observed in the 46-55 age group (20.4%), the 56-65 group (8%) and the 66-74 group (2.5%) compared to 73.3% in the 16-25 group.

iii) Only 2.1% of men and women with primary education, and 31.7% with secondary education were connected, compared to 68.4% of the population with higher education.

iv) The very low usage recorded in the regions of Western Greece (20.9%), Thessaly (21.3%), Sterea Ellada (21.4%) and the Peloponnese (21.6%) was starkly contrasted with that of the Attika region (41.2%) (Observatory 2008a).

Moreover, all the percentages by category in terms of sex and age were the lowest in the EU-25.

4.5.2. Enterprises

One of the OPIS aims was to improve the competitiveness of Greek firms, particularly small and medium enterprises which comprise 98% of all companies) (Mavrotas et al. 2005). At the enterprise level, in 2003 92% of firms with 11-250 employees possessed PCs (94% in the EU-15), 82% were connected to the Internet (83% in the EU-15), while 48% had also a website (52% in the EU-15). These tendencies were reinforced through the "eBusiness" action of the OPIS, resulting in an 87% Internet connection in 2004 (90% for the EU-15). In 2006 this percentage was 92.5% for firms with 10 or more employees (94% for EU-15), while the 2008 percentage (96.6%) had surpassed the EU-15 average (95%) (Observatory 2009).

Regarding broadband, in 2004 only 21% of enterprises were using a broadband connection, by far the lowest percentage in the EU-15 and among the lowest even in the EU-25 (Eurostat 2005). However, since then there has been an increasing convergence: In 2006, broadband Internet access among enterprises of 10 or more employees was 60% (73% for EU-27), while in 2008 the figure was 79.8% (81% for EU-27). Nonetheless, e-commerce activity remained low, with 8% of the population

purchasing electronically goods or services for private use (24% for EU-27) (Observatory 2009).

Very small enterprises (up to 10 employees) lagged significantly behind the EU average: in 2002 34% had a PC and 17.7% were connected to the Internet (Foundation for Economic and Industrial Research 2004). The "Go-Online" programme for small enterprises, which subsidised initial purchase of ICT and also provided training, was expected to have an important contribution in this context (according to a survey, 60% of small entrepreneurs were of the opinion that the programme could sufficiently address their needs) (EDET 2004b; OPIS 2004). By 2006 38% of firms with up to 9 employees were connected and this percentage had become 50.9% by 2008 (Observatory 2009). Although direct comparison with the EU average could not be made, circa 2007 there was a significant divergence between the firms with less than 10 and those employing 10 or more employees, as well as between newer enterprises with young personnel and older ones, something which added to the picture of digital divide in Greece (Observatory 2007b).

4.5.3. Education and training

In the area of education and training, there has been considerable diffusion of ICTs and Internet in schools on a nationwide basis, with about 150,000 teachers trained in ICT skills. By 2002, 100% of secondary education institutions were online (36% in 2000), while 47% of primary education institutions were online (only 3% in 2000) (Eurostat 2003). The national school net has been upgraded, 6204 ICT labs have been created (2002), telematic services and applications for students and teachers in higher education have been developed (Caloghirou 2003). With regard to training, there was an increase in the percentage of those who have acquired IT skills in a school or university environment, from 22.8% in 2002 to 27.5% in 2003, something again linked with the progress of the OPIS in educational contexts; 44% of those using a computer for professional purposes had received training in the workplace by 2002 (close to the EU-15 average of 49%), while about 110,000 unemployed or self-employed had also been trained (Ministry of Economy and Finance 2004).

The presence of equipment and infrastructures in educational contexts meant that communication and access to information were greatly improved and, since this is a central aspect in education, the entire education process improved, notably at universities. Nonetheless, despite statistics suggesting ICT diffusion in primary and secondary education establishments, in many cases equipment was not used due to lack of education and technophobia. On the wider societal level, the percentages of those trained in ICTs remained considerably low compared to the EU average. Characteristically, the share of active population that used a computer for professional purposes was only 35% in 2002 (53% for EU-15). The share of computer professionals in total employment in 2002 was only 0.5% (1.7% for EU-15) (Eurostat 2003), while eSkills have stabilised over time and are among the lowest in Europe (in 2008 Greece was 24th among the EU-27 with regard to the percentage of employed people who have ICT user skills, and 26th in terms of percentage of employed people with ICT specialist skills) (Eurostat 2009); these are indicative of Greece's position vis-à-vis the information society .

4.5.4. Public sector

In the public sector, diffusion and deployment of ICTs has been limited in almost all areas. Exceptions have been certain parts of the TAXIS Net project (addressing fiscal procedures), as well as the area of education and training, with the development of the advanced Greek Research and Education Network (GRNET) interconnecting academic and research institutions, primary and secondary schools.

In 2008, 7 out of the 20 public services designated in the i2010 strategy were fully[35] available electronically (Observatory 2009). This gives an idea of the limited absorption of ICTs in the public sector (supply side) and can account for the low use of Internet-mediated interaction of the population with public authorities (Table 3 above). Further, the relatively low degree of diffusion of ICTs in households also contributes to the slow evolution of eGov services (demand side). By contrast, at the

[35] Meaning providing the opportunity to carry out a complete transaction as opposed to just receiving information or relevant forms or even submitting forms

level of firms of 11-250 employees, the percentage of interaction with public authorities was 71% in 2006, much higher than the EU-15 average (Figure 4.4).

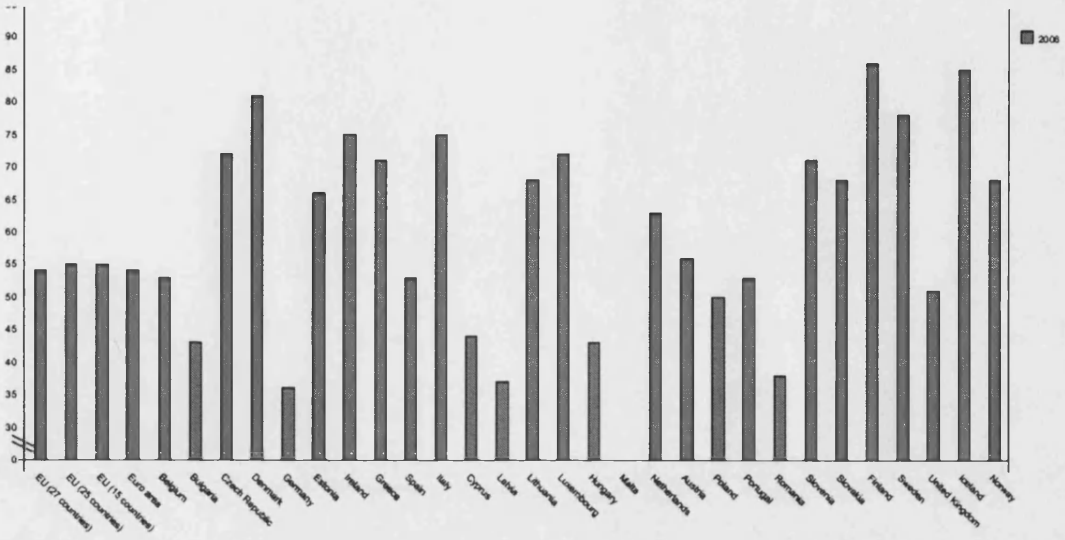

Figure 4.4: Enterprise interaction with public authorities (2006)
Source: Eurostat 2007

The share of ICT expenditure related to information technology as part of GDP remained less than 1.5% both in 2005 and 2006, again the lowest in the EU-27. However, the share of ICT expenditure referring to telecommunications was 3.3% and 3.2% of GDP in 2005 and 2006 respectively, i.e. greater than the EU-15 average (3% and 2.9% respectively) (Eurostat 2007).

A significant issue is the extent to which new ICTs have been incorporated in the operations and service provision of large public organisations. A recent relevant study of 30 key public organisations (in telecommunications, electricity, water, posts, television and transport) undertaken using qualitative research methods revealed a number of impediments in the absorption of ICTs and the carrying out of electronic transactions:

- Organisational structures were found to be too much based on older bureaucratic models and were not customer- and service-oriented; as a result, there were regulatory and organisational weaknesses and delays.

- The regulatory framework for public procurement was considered a significant force of impediment, together with the difficulty for suppliers to adapt their own systems of procurement.
- ICT departments were either non-existent or inadequately manned, while ICT education and training of staff was lacking and resistances were encountered, in particular from older staff.
- Lack of competition in monopoly sectors (e.g. electricity or water utilities) resulted in inertia in adopting new ICTs.
- The procedures for project allocation were long-winding: often, by the time a project was implemented its technology had become obsolete.
- The legal framework originating from the EU and its adaptations to the Greek context was incomplete and suffered from fragmentation, with different bodies responsible for its application.
- Regarding the demand side, there was limited use of electronic services in general and electronic sales in particular, which was linked with the low Internet diffusion in society, as well as with concerns about the security of transactions.

The same study demonstrated that only 16.7% of the organisations examined were using electronic procurement, while around 56% of them had information systems to provide electronic services to the public; however, these were mostly for communication and information provision, rather than for transactions and they tended to be only a small fraction of the overall set of services provided (Observatory 2008b).

4.6. The ICT sector

The structure of the Greek ICT industry is both important and interesting for this thesis. Interesting, because it reveals differences with other ICT sectors in other national contexts. [36] Important, because such differentiations are also expected to be dimensions of overall national particularities in the IS/KBE, which is the object of this

[36] In particular Finland, which we use a quasi-reference point due to the good coverage of the 'Finnish model' in the literature and mainly through the work of Castells and Himanen (2002).

thesis. In this chapter, we provide a snapshot of the structure of the sector, before moving to the implications of this structure and more qualitative aspects in chapter 5.

Based on studies undertaken in 2006 and 2007 (Observ atory 2007a, 2007b) and including more or less the totality of the (Greek) ICT firms in Greece (rather than a representative sample), the ICT sector comprises about 1800 enterprises in IT and telecoms and is broken down into the following categories:

- ICT trade (trade in office machines, PCs and telecoms equipment) 40.2%
- IT services (mainly larger firms offering integrated IT solutions) 35.9%
- Software products (firms offering mainly software licenses and standard software products) 7.4%
- ICT equipment manufacturing 7.8%
- Telecommunication services 8.7%

Regarding the year of establishment, the vast majority of firms (88.2%) of the Greek ICT sector were established in the last 15 years (1990-2005). Further, in terms of geographical distribution in the country:

- 79.2% of firms are based in Athens
- 9.4% of firms are based in Thessaloniki
- only 11.4% of firms are based in the rest of Greece

As far as the size is concerned:

- 36.8% of firms have up to 10 employees (micro-firms in the EU classification)
- 44.7% of firms have between 11 and 49 employees (small firms)
- 14.8% of firms have between 50-249 employees (medium-sized firms)
- 3.7% of firms have 250 employees or more (large firms, excluding OTE)

In general, the relative shares of number of enterprises between IT and telecommunications are about 87% compared to 13%. However, the IT firms are much smaller than the telecommunications enterprises, the former employing 43 people on average each, the latter 122 employees on average (excluding OTE, which is the largest employer). Overall, the vast majority of Greek ICT firms (81.5%)

employ up to 49 individuals, and are classified as small firms, while only 3.7% (41 firms) are large and these are, generally speaking, large retail chains or telecommunications firms.

ICT equipment manufacturing firms employ on average 85 employees, while 5% of them are large firms. Half of the firms in ICT trade and IT services employ up to 12 employees, while the average personnel in software firms is 51. It is significant that 61.4% of the employment of the ICT sector comes from telecommunications (a great share of this employment being from OTE), while 38.6% are employed in the IT sector. Significantly, if OTE is not taken into account, the telecoms employment accounts for just 38% of the sector (Observatory 2007a, 2007b)

A measure of the significance of the activity of the ICT sector is the percentage of ICT exports on total exports (1% in 2007, the lowest in the EU-27).

4.7. Institutional Changes

On the legal front, a series of EU directives over the 1990s have been translated into relevant legal frameworks in Greek law in the last decade. [37] A landmark in the story of the information society in Greece has undoubtedly been the 2001 constitutional change, which introduced the right of all the Greek citizens to participate in the information society (Article 5A, paragraph 2). It is worth noting that the article in question does not only guarantee this right, but also instructs the state to facilitate in any possible manner the citizen's access to electronic information, as well as its production and communication. Still, until at least 2006 Internet access costs

[37] On the legal front, a series of EU directives over the 1990s have been translated into relevant legal frameworks in the Greek law. Selectively, the following are considered important: Law 2121/1993 on intellectual property, relevant rights and cultural issues; Law 2225/1994 on communication privacy; Law 2472/1997 on the protection of the individual vis-à-vis processing of personal data and its modifications in Law 3471/2006 and 3625/2007); Law 2867/2000 on the organisations and functioning of telecommunications; Presidential decree 150/2001, which adapts directive 1998/116/EC on electronic signatures; Presidential decree 131/2003, which adapts directive 2000/31/EC on certain legal aspects of services in the IS, in particular electronic commerce; Presidential decree 150/2001, which adapts directive 99/93/EC on electronic signatures.

continued to be high, notably due to increases in OTE tariffs, which was paradoxical taking into consideration the state's largest minority stake in OTE at the time (Papadimitriou 2006).

On 17 January 2006 the Greek Parliament adopted a new telecommunications Law (3431/2006) incorporating the EU electronic communications legal framework. This law provides for the formation of a new consultative body, the Commission of Communication Policies, and defines the tasks and responsibilities of the telecommunications authorities. The Ministry of Transport and Communications is responsible for national policy and sets the procedures for the selection of the universal service provider; the EETT observes and reviews the application of the law and the established national policy and grants licenses where necessary. The providers are allowed to render relevant services after a special notification to the EETT whereas, when the use of scarce resources is needed, a general license must first be granted. Further, the EETT prohibits abusive exploitations of dominant market positions, controls the concentration of companies in electronic communications and has the power to impose fines and sanctions (EETT 2006).

The creation of independent regulatory authorities related to information and telecommunications, notably the EETT, the Hellenic Authority for Communication Security and Privacy (ΑΔΑΕ) in 2003, or the Hellenic Data Protection Authority in 1997, has been a process resulting from the EU call to conform with the rules of the Common Market and has been regarded as a significant institutional change (Spanou 2008). However, such independent regulatory authorities have either been bypassed by the government (e.g. the case of ΑΔΑΕ regarding a notorious affair of phone tappings, which led to a series of resignations of its members) (Pappa-Soulounia 2007); or they have ceased to be independent (as in the case of EETT, the board of which is currently selected by the Minister for Transport and Communications, while the president and vice-presidents are appointed by the inter-ministerial council following the approval of a recent law).

4.8. Conclusions

The IS policy in the EU has to be placed in a broader EU integration agenda, which has been very much a technological, as well as political project. The process of harmonisation in the European context, involving the set up of common standards and regulatory regimes, including technical instruments and practices, has been an essential dimension of the project to establish a common technological zone (Barry 2001).

The EU rhetoric and policy regarding the information society introduced around 1993-1994 was characterised by a quasi-deterministic tone treating the new ICTs as an exogenous variable with a transformative and constitutive role and calling for social and regulatory adjustments to accommodate their over-determining effects and exploit their competitive potential in a global environment. The Bangemann rhetoric introduced the idea of buying into the EU vision and building national societies according to it. The liberalisation of the telecommunication sector in Europe was presented as the first major step towards this direction. New regulatory models developed by the Commission, policy transfer between EU states, and ideas brought from the US who had pioneered telecommunications transformation were transmitted at the national level so as to shape the telecommunications market. Liberalisation had been completed in more or less all EU countries by the late-1990s (Jordana 2002).

Following a series of consultations pointing out the significance of the social implications and dimensions of the information society, the post-Bangemann agenda slightly shifted from the idea of transforming the EU according to the US ideals to the introduction of social aspects to make the project more acceptable and to invite co-opting at the national level, as well ensuring that the tangible aspects of the relevant budgets play out. The emphasis on liberalisation of telecommunications was replaced by the rhetoric to make Europe the most advanced knowledge-based society with social cohesion and cultural diversity. Nonetheless, the introduction of social elements does not mean that these became dominant. Indeed, the indicators used in the eEurope initiatives (for cheaper and faster Internet, investment in people and skills, use of the Internet) reflected the interest in infrastructure and skills, eCommerce and eGovernment. These indicate the continuing dominance in policy circles of the

techno-economic dimension of IS/KBE policy in the EU. Broadband and mobile technologies are seen as the key to social cohesion, which leaves the question of access to and use of these technologies open (Martin 2005). Cultural diversity, which had not been taken seriously before, needs also to be seen in the context of the EU enlargement and its promotion has been accompanied by a strong emphasis on governance and harmonisation.

The Lisbon strategy has established closer cooperation and commitment from a number of EU authorities, member states, civil society and NGOs in a number of policy areas, using the open method of coordination to transfer best practice and international policy experience. These developments have led to considerable policy convergence as to the general directions of all national information societies, determined at the EU level. Nevertheless, the Lisbon strategy leaves much room for variation in the information societies to be finally implemented at the national levels. In parallel, it has re-launched the significant role of the state, the structures and institutions of which are called upon to promote the implementation of the European information society project. The place of the state under these circumstances is both important and highly sensitive, in that it stands between different geographical scales of authority and has to strike a balance between supranational directives and national/local characteristics. At the same time, there has been an overall transformation in its role towards less direct intervention in the economy and society.

Indeed, the evolution of the information society project in Europe can be seen as a bi-directional dialogue between the EU bodies and the member states. On the one hand, it forms part of the high level integration discourse and involves large scale policy transfer, expressed in the *acquis communautaire*, the body of European legislation which the candidate countries have to accept (Radaelli 2000). On the other hand, it has engaged the member states and mobilised national programmes of IT investments and rollout.

Greece has followed closely the tone of early EU reports in the formulation of an initial information society vision. Initial preoccupations had to do with the relative underdevelopment of the infrastructures of the country and the positioning in the development opportunities presented by ICTs. The liberalisation of

telecommunications in the 1990s can be seen in the light of this initial disposition, in line with the international atmosphere. Subsequently, and in parallel with the development of the eEurope initiatives, the country prepared more detailed and strategic plans with increased awareness both of the competitive potential and of the quality of life opportunities brought about by ICTs. The social and cultural dimensions of the information society were taken into consideration, as were also a number of socio-economic and cultural parameters historically endemic in the Greek reality.

The evolution of thinking in the Greek circles has overall echoed the EU discourses. It has moved from a telecommunications sector that had been extremely dominated by the state monopoly and the public operator OTE to liberalisation and the introduction of competition, subsequently to ideas around the regulatory reform of the sector, then to the overall information society discussion in the EU, with later ideas reflecting stronger emphasis on social aspects. This evolution has also mirrored the evolution of the group of people who have been central in the information society developments in Greece, in particular a team based at the National Technical University of Athens and certain external academics and technologists (YC 2008).

The evolution of IS policy has also been placed in the context of the Simitis modernisation project and relevant discourses of the 1990s. This is reflected in the emphasis on the role of the Greek state in the 1999 White Paper. Contrary to other European cases, characterised by an indirect mode of state intervention, in Greece it was (and still is) called upon to assume a more direct role, partly due to the extensive reforms required in the state/economy relationship, as well as to the significant public administration interventions that will be required to improve public bureaucracy and services (Leandros and Iosifidis 2003).

The modernisation project has been ambivalent and with equivocal results. Privatisations changed some of the dependencies of the economy on the state; decentralisation reforms have been implemented, but fiscal decentralisation has not progressed, while the size and capacity of local government has remained limited and subjected to central government control; the creation of a plethora of new independent authorities subject to different regulatory regimes was a progressive step in improving

citizen/administration relations, but these have also contributed to further fragmentation in Greek administration and the blurring of the boundaries between public and private and have posed coordination problems with ministries and other administrative entities. Politics and parties continue to be heavily involved in recruitment and the operations of the public administration. Legalism, formalism, rigidities, as well as mistrust of citizens towards the public sector have remained. Reforms have been fragmented due to frequent cabinet reshuffling, alternations in government, and corporatist or clientelistic interests (Spanou 2008, pp.168-169). By and large, the list of characteristics presented in chapter 3 (Featherstone 2005) have been left unchallenged by the reforms of the 1990s. [38]

Despite a comprehensive strategy, initial results indicated that the OPIS was slow in its implementation. In 2008, Greece occupied the last position in the EU-25 in terms of all indicators of information society development, with the exception of telephone lines and mobile phones. Private consumption, rather than production, was driving the information society, resulting in the diffusion of simple infrastructures (mobile telephony), while advanced infrastructures (e.g. broadband) were less spread. Digital divides were observed, as ICTs were much more diffused in firms than in households, disproportionately diffused in large and medium enterprises in relation to small and very small firms, as well as among individuals, in terms of sex, age, education and geographical location. Apart from specific success stories, there was limited incorporation of ICTs in government and public authorities overall, as well as in daily life and practice. As the IS Secretary 2002-2004, a very passionate and enthusiastic driving force behind the implementation of the OPIS, remarked: "*One segment of the Greek society has progressed, but the rest does not follow. It is evident that the information society has not advanced as much as it could have done*" (YC 2008).

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[38] On many occasions, the overemphasis of modernisation on imaginary rational ideal societal types has seemingly screened out the complexities of the Greek situation, leading to unsuccessful reforms, while certain important dimensions and social practices that are indeed problematic have been overlooked. Tax evasion and citizen-state relations in terms of obligations and benefits, social attitudes and practices towards the environment, management and modernisation of the agricultural sector, a much-needed educational reform -particularly regarding secondary education based on private tuition as a substitute for the decreasing quality of public secondary educational institutions- and a number of contradictions in the value system of contemporary Greece are issues in real need of modernisation (Sevastakis 2004).

On one level, the information society picture can be seen as a mere lack of capacity to comply with EU policies. On a different level, however, this picture follows the ambivalence of the modernisation project. Both IS and modernisation have been based on international deterministic discourses about competitiveness, efficiency and development and assumptions about ideal-typical societal models. Both have been interpreted in a national context with its own institutional, socio-economic, political and cultural profile. In accordance with our conceptual framework of capitalist diversity, Greece has followed its own distinct course vis-à-vis modernisation and the information society, which has involved contradictions and dualities.

This distinctiveness will be further elaborate upon in the next chapter, in which it will be shown that the manifestations of change have gone hand in hand with the persistence of historical legacies and characteristics. Chapter 4 provided a snapshot of the current situation of IS in Greece, based mainly on quantitative indicators. Chapter 5 gives a more qualitative overview and presents the empirical findings of the Greek information society from a series of interviews that took place between 2005 and 2009 with a number of key experts involved in policy, representatives of the ICT sector and academics. In accordance with the conceptual framework of chapter 3, these are analysed by looking into the state/economy/civil society coupling, which includes the type of state activity and the degree of state intervention in the ICT market, economy and society. This analysis adds explanatory value to the Greek picture painted in this chapter and is intended to be applicable to other IS cases and useful for information society research in general.

CHAPTER 5: STATE/SOCIETY AND INFORMATION SOCIETY IN GREECE

5.1. Introduction

The White Paper of 1999 and the following OPIS horizontal strategy have provided the backbones for the promotion of the information society in Greece. They have also demonstrated a national state active in incorporating global imperatives and attempting to integrate these in the context of its national society. "*Both in the White Paper and in the OPIS, our approach was intentionally very broad. We wanted to communicate to society the message that both the design and the implementation concerns not only ICTs and the public administration, but also the citizen in his different activities, his/her health, transport, rights, relationship with mass media, education, capacity for conducting business, unemployment, or fiscal matters*" (GP 2006).

Nonetheless, the current consensus among the (limited number of) authors writing on the Greek IS seems to be that despite a robust approach to policy formation, as demonstrated by the 1999 White Paper and the OPIS, there have been barriers to implementation. Caloghirou and Constantelou provide an explanation as to why these barriers exist: 'It is widely accepted that although countries appear to concentrate their efforts on sorting out similar problems ... the type, magnitude, and depth of these apparently similar bottlenecks are likely to be very different from one country to another reflecting their different stages of economic development. Thus, variations in response time and/or in the strategies selected for pursuing particular goals mirror the different circumstances and socio-economic environments within which individuals, companies, and policy institutions operate in each country' (Caloghirou and Constantelou 2006, p.2).

Building on these remarks, we treat implementation impediments as symptomatic of broader characteristics of the national context in question that have been developed over time. These (social, political, cultural) dimensions have been consolidated into structural and institutional elements and have informed social practices.

Our intention is not to evaluate the IS/KBE in Greece on a negative/positive scale. Rather, it is to focus on certain significant dimensions of the trajectory towards the Greek IS/KBE and try to connect them with historical legacies in a systematic way. We consider that it is important to capture the nuances of the processes of the evolution of the information society in Greece that cannot come across by quantitative indicators alone. For this reason, we now complement the sketch of chapter 4 with a more elaborate, in-depth and qualitative research agenda based on a series of interviews undertaken between 2005 and 2009 and involving key government officials and experts involved in the Greek IS strategy, representatives from the ICT sector, as well as academics.

Since the ICT market is dominated by a large number of IT firms and only a few telecommunications firms, the interviewees from the industry come predominantly from the IT sector. However, the convergence between IT and telecoms internationally and also in Greece in the last decade has been reflected in alliances between IT and telecoms firms, while the majority of the OPIS projects have involved joint ventures between an IT firm and a telecoms carrier. In effect, the material drawn from the interviewees refers to expectations and practices that are applicable to the entire ICT sector, as well as cases and examples that involve telecoms firms. OTE is also covered, the reason being that it has been a sine qua non in telecoms developments and consequently IS developments due to its dominant position in infrastructures, including broadband.

An ex ante assessment of the OPIS took place in 2000, in accordance with the EU imperatives of evaluation of previous experience[39], and drew a number of significant conclusions from the implementation of IS projects under the auspices of the second CSF (OPIS 2000). During our interviews, it emerged that almost all the key dimensions noted in this preliminary assessment are still valid.

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[39] According to EU regulation 1260/99, national authorities and the European Commission have to agree regarding the methods, structures, procedures and timetables that are to be used for the purpose of the evaluation of the CSF, operational programmes, or other relevant programmes and actions. The ex ante assessment relates to i) analysis of the results obtained from previous assessments ii) analysis of the strengths and weaknesses, as well as of the prospects and potential of regions and sectors iii) assessment of the rationale and the cohesion of the strategy under consideration iv) quantification of priorities and goals v) analysis of expected implications vi) evaluation of the quality of the implementation mechanisms (OPIS 2000).

As a starting point, it has been observed that the society-technology articulation in the Greek context has historically presented particularities: *"The degree to which the Greek society and economy has historically absorbed different technologies (from electricity to ICTs) is a Greek idiosyncrasy. Generally speaking, it has been observed that we are on the whole superficial users of technology. There are deep causes for this tendency. The degree of maturity of the Greek industrial economy has been considered one of the main reasons why new technologies have been difficult to absorb by the Greek society. A second reason has been the role of the Greek state in periods of modernisation and in development overall"* (TK 2005).

Such particularities have been more often than not the object of study and research (though not in the information society context). The fact that Greece has historically shown receptiveness to the idea of technological modernisation at a first level, but has found difficulties in the actual absorption and deepening of new ways of living and working (Voulgaris and Sotiropoulos 2002) can be seen as perhaps the best justification for using a state/society approach (presented in chapter 3).

Whether one accepts that Greece is a 'societé bloquée' (Featherstone 2005) and emphasises the necessity to overcome institutional legacies or one draws one's attention in non-normative terms to the complexity of structures and institutions informed by the particular historical dynamics of Greece, as Caloghirou, Ioannides et al. (1993) do, the state/society relationship can be a useful analytical lens to approach institutional legacies and provide clues as to several aspects of the social and political implementation of the information society in Greece. In particular, this perspective can highlight the role of state structures, and the relationship between the state, the economy and the civil society as manifested in the information society project. The operationalisation of these involves relations between state agencies, links between state organisations, businesses and civil society, policy processes and their organisational contexts (Evans 1995). The state/society perspective moves beyond abstract notions of the information society expressed in political statements to investigate implementation aspects, including procedures, capabilities, practices and social norms, as well as the relevant institutions, organisations and individuals. Such an approach can provide explanations of impediments, but also be informative regarding prospects of successful IS development, suggesting that an understanding of

the national context and its particularities should be fundamental in the design and implementation of IS policies.

A similar attempt to analyse a national IS model in the EU context by looking into the state/society configuration and into the particular history of the national social formation has been the study of Castells and Himanen (2002) on the Finnish information society. A largely agricultural country until the beginning of the 20th century, Finland has come to represent a model of IS that combines technological development and competitiveness with a strong welfare state and equal distribution of resources. In this respect, it differs from aggressively competitive IS models, for example the US or Singapore. The particular character of the Finnish IS has been attributed to a number of political, economic and cultural factors that have evolved historically, as well as with the articulation of these with the historical place and role of the state.

The development and dominance of Nokia as a leading edge technological innovator is often seen as one of the main reasons why Finland emerged as a major technological player in the international scene and has certainly contributed to the development of a competitive ICT industry and internal market. Nevertheless, the drive towards building an IS, in essence the extension into the present of a historical drive towards development and modernisation, was born out of the need for survival both against foreign powers and harsh weather conditions. The Finnish state itself was born as a survival project and each government achieved its legitimacy by ensuring national survival.

On a cultural level, the Finns have always viewed technology positively, notably because they have regarded it as a tool of survival against unfavourable weather conditions, rather than being sceptical against a technological way of living. In addition, the short history of the Finnish nation (gaining independence from Russia in 1917) has facilitated an orientation towards the future, while a minority attitude and a national sentiment of inferiority has made the prospect of national excellence in any area particularly important.

At the same time, the culture of survival has developed a strong sentiment of collectivity against common hardships, which was reinforced by a strong Protestant-Lutheran ethic placing emphasis on pursuing an equal society rather than being driven by an individualist ethos. In parallel, survival struggles have given rise to a strong labour movement, as well as a women's movement, which has been pivotal in the development of the Finnish welfare state (Castells and Himanen 2002, pp.127-139).

These dimensions informed a set of processes guiding the transformation of Finland to a leading knowledge-economy after a deep recession in the 1990s: industry shifted to knowledge-intensive activities and this was accompanied by a societal mobilisation; industrial policy involved intensive communication between industry, academia and the state; the government acted as an enabler of a favourable business framework; policy involved different interest groups, councils of ministers, industrial associations and intermediaries; on the societal level, networking was given prominence, while the public educational system responded to emerging ICT needs (Rouvinen and Yla-Anttilä 2006).

The 'Finnish model' has been celebrated as a combination of competitive IS and a strong welfare state tradition, with social inclusion and absence of notable resistance identities (Castells and Himanen 2002). Nonetheless, the antilogue is that the policies adopted by the Finnish state (deregulation, liberalisation, and privatisation) in view of the information society have eroded the traditional characteristics of the welfare fabric of the Finnish society and that inequalities and social exclusion rose in Finland in the 1990s (Patomäki 2003). In this chapter we draw on the Finnish case as a counterpoint to the Greek information society.

The analysis of our findings of IS developments in Greece in the period 1998-2008 is carried out with the state/society linkage into mind. Building on our interview material, as well as our observations of IS developments in Greece in the period 1998-2008, we provide a narrative presentation of key dimensions that have marked the information society development in Greece and their links with historical legacies of the Greek state/society context, as codified in the list of national characteristics presented in chapter 3. This includes the political entities and policy processes that have been observed, the bureaucratic context, the relationship between the state and

the ICT sector, notably in the context of public procurement, as well as the relationship between the state and civil society. Certain cultural dimensions that span the state/economy/civil society triptych are also presented. The case of OTE is examined in some detail, both because of its significance as an ICT player and as an exemplification of state/economy/civil society relations in the context of technological modernisation, public procurement and liberalisation/privatisation policy. The TAXIS project, possibly the most successful of the information society applications, is also elaborated upon as a case where state/economy/civil society relations have manifested themselves in the form of structural problems (party antagonisms, bureaucratic rigidities, user resistance), but also through inventive practices.

5.2. The OPIS actors

According to legislation passed in 2000 (Law 2860/2000) several institutional actors have been set up to manage and implement the OPIS (Leandros and Iosifidis 2003):

- The Managing Authority, operating under the Special Secretariat for the Information Society established within the Ministry of Economy and Finance, which deals with the design, suggestion and approval of action lines for the OPIS, the follow-up and control of their implementation, as well as writing of annual techno-economic reports and supervision of financial, legal and logistical aspects.

- The Monitoring Committee, having a supervisory and advisory role and comprising representatives of ministries, public organisations, economic and social partners and non-governmental organisations (among them municipal authorities, regional secretaries, the Federation of Greek ICT Enterprises (SEPE), the Federation of Greek SMEs, the Technical Chamber of Greece).

- The Information Society S.A. (IS S.A.), a public not-for-profit organisation operating under the supervision of the Ministry of Internal Affairs, Public Administration and Decentralisation, which is charged with the administration of public call for tenders for projects seeking funding under the OPIS. It also

provides support and advice to government and other public and private institutions in the implementation of the OPIS, using external expertise when necessary.[40]

- The Observatory for the Information Society, a kind of think tank to monitor the progress of the information society in Greece by conducting surveys and supervise benchmarking studies, transfer expertise and best practice relevant to information society issues from the European experience, as well as providing training tools for the private and the public sector; the Observatory actually started operating only in June 2005.

Other bodies that have taken part:

- The New Economy Development Fund (TANEO), established in 2002 and investing in venture capital for innovative businesses.

- Numerous forums and consultation groups intended to address various social, economic and technological aspects of the information society. The most successful of these has been the eBusiness forum, initiated by the EU and set up in 2000 as an open consultation mechanism involving stakeholders from government agencies, business, academia and the media with the following aims: a) to enhance SMEs awareness of eBusiness b) to inform policy-makers about developments in policy implementation, link with international policy initiatives and make policy suggestions (Constantelou 2001).

Finally, the totality (twenty nine) of ministerial general secretariats and thirteen regional secretariats have been involved, bearing the responsibility of decentralised implementation of projects together with the IS SA.

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[40] As one interviewee involved in the preparation of the OPIS stated, "*After many struggles and many pressures from the EU, we moved from the second CSF to a central implementation mechanism of most projects, which was the Information Society SA, with the intention of overcoming problems of awareness, problems of coordination between ministries, lack of political will at high levels. Putting into place such an organisation in Greece was a big project and despite our best efforts the IS SA essentially started operating only as early as 2002*" (TP 2005).

Figure 5.1 summarises the actors involved in the OPIS implementation:

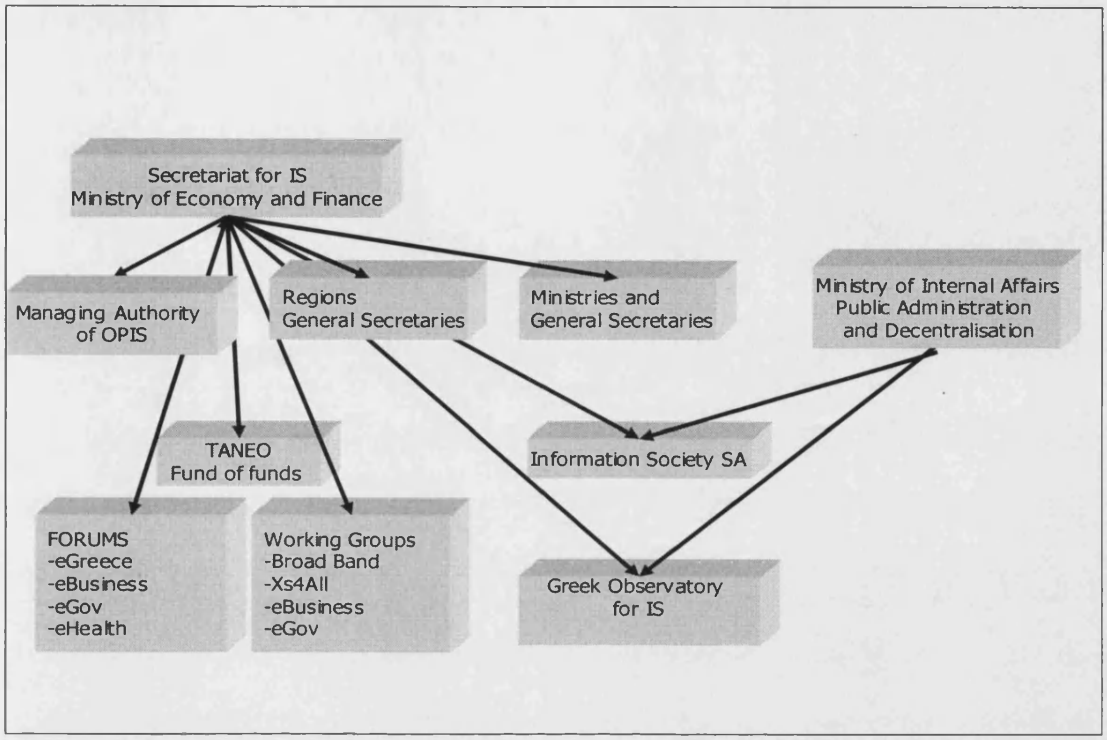

Figure 5.1: OPIS Management Scheme and Organisational Structure
Source: Caloghirou and Constantelou 2006

By 2002 the basic OPIS structures were into place and project implementation had started. The OPIS implementation process is described in (Mavrotas et al. 2005) as follows: the relative authority announces a new action, which belongs to one or more action lines. Proposals are submitted and evaluated and if they satisfy certain criteria they are incorporated in the programme, which means that they can get funding from the financing mechanisms. After the incorporation phase, a bidding procedure is set into place, in accordance with EU guidelines, and a final contractor is selected to execute the project. Contracts are signed between the contractor and the owner of the project (ministry or other authority) and the implementation phase begins. A project might be divided into subprojects with separate contracts. Monthly progress reports are also expected on the part of the contractor.

With its broad perspective, the OPIS included projects that belonged to one or more of the following thematic programmes, presented here with the percentage of the

projects that had been incorporated by March 2004: education (94%), culture (72%), e-government (88%), health (70%), intelligent transport (64%), business support (74%), research (71%), education and training (63%), while the broadband and the municipalities programmes had been announced but projects not yet incorporated at the time (Ministry of Economy and Finance 2004). Overall, incorporation (the pre-implementation stage) progressed quite satisfactorily, but the picture was different with implementation proper, where a number of structural characteristics and practices have manifested themselves, as described in sections 5.3 to 5.7.

5.3. Political entities and policy processes

The public policy process in Greece is overall hierarchical, with complex relations between ministers and personal advisors often operating across ministries, party-affiliation of 'experts', weak support from civil service and absence or underutilisation of think tanks and expert policy communities that would provide legitimation (Ladi 2005, Monastiriotis and Antoniadis 2009). In result, political initiatives suffer from antagonisms and competing interests within and across government agencies. Moreover, such antagonisms are exacerbated through highly conflictual relations between the two major political parties, based on opposing social identities and patronage systems (Featherstone 2005). In the case of the information society there has been from the beginning antagonistic behaviour between ministries, structural problems in the allocation of responsibility, lack of a coherent and continuous information society vision at the prime ministerial level and frequent inter-party conflicts.

5.3.1. Expectations, antagonisms and articulation of governmental power

The 1999 White Paper emerged from the political will, at least on the part of the then Prime Minister Simitis, to follow IS developments that were taking place in the EU at the time. A special advisor to the Prime Minister was appointed and was given the responsibility to form a group of experts: "*The group worked very independently, but because of that it did not have political legitimation. Simitis embraced it, but ministers were not related to it. When we submitted the White Paper to the*

governmental committee, it became clear that had it not been for the preparations for the 3rd CSF, the information society plan would have been abandoned" (GP 2006).

Subsequently, the OPIS was prepared in cooperation with the Ministry of Economy and Finance and was submitted to the ministerial council for approval: "*There the whole programme ran the risk of being abandoned, as the three ministers involved (the Minister for Economy, the Minister for Internal Affairs responsible for electronic government and the Minister for Transport and Communications, plus a fourth pillar, the Minister for Development, all wanted to break the OPIS and receive separate chunks of pertinent CSF funds directly for their ministries. The Ministry of Development wanted all that had to do with business, the Ministry of Transport and Communications all related to telecoms, the Ministry of Internal Affairs for all projects related to e-government, the Ministry of Economy and Finance wanted to pilot the whole project, while there were others who wanted to control funds as well, e.g. the Ministry of Education regarding funds for computers in schools*" (GP 2006).

Many interviewees have identified as a problem the fact that at least four ministries were fighting for the ownership of the OPIS. The preoccupation with controlling funds and the ownership expectations of ministries were opposing the horizontal nature of the programme, as well as ignoring the inherent implementation capacities of the ministerial agencies. The logic of a single, unitary programme, which was promoted by the Ministry of Economy and Finance, was to have a mini CSF spanning throughout all ministries and the entire society. Behind this suggestion lay an awareness of the idiosyncrasies of the Greek public sector and societal culture, notably juxtaposed with the respective dimensions of the Finnish model, which was then becoming well-known. In this spirit, it was acknowledged that, unlike Finland, Greece did not have adequate public administration experience and know-how vis-à-vis ICT projects. Due to the innovative nature of IT projects, the ministerial authorities did not have the knowledge to run them, as these were not classic public sector projects. Experience needed to be accumulated and economies of scale achieved in management and implementation. Therefore, although many different agencies were to implement the projects, it was considered necessary to have a central directive and supportive mechanism to push implementation entities. For these reasons, a single programme was suggested that would have three pillars:

management, made up of the Special Secretariat and the Managing Authority and led by the Special Secretary; implementation support, provided by the IS SA; the Observatory, which would be in touch with foreign scientific developments.

Until the last minute, however, the impression was that due to the ministerial antagonisms there would have to be two separate programmes. The fact that the European Commission preferred a single programme helped the internal negotiations, but ultimately the deadlock was resolved at the level of the Prime Minister with two ministries taking the responsibility for the programme, namely the Ministry of Economy and Finance and the Ministry of Internal Affairs. The Managing Authority of the OPIS belonged to the former, while the IS SA to the latter. There was also the Monitoring Committee, which belonged to the Ministry of Economy and Finance, but its president was the General Secretary of the Ministry of Internal Affairs: "*This duality, which was necessary for the programme to be approved, has taken its toll, in terms of delays, coordination difficulties, antagonisms and enmities with regard to who 'carries the flag' of the information society in Greece*" (GP 2006). Indeed, antagonisms between the two ministries run throughout the OPIS; the 2002-2004 IS Secretary recalled having frequently to resort to the prime minister's office in order to resolve tensions arising from this antagonistic behaviour (YC 2008).

Different ministries had different reactions to the prospect of co-operating with the OPIS management authorities: The Ministry of Justice and the Ministry of Health insisted on doing the relevant projects on their own and in their own terms, although they did not have the human resources for that. It was a matter of controlling the processes, not necessarily at the ministerial level, but certainly at the level of relevant committees that would be involved. [41] Big problems were also encountered in the field of telecoms, where the ministry wanted to be in control of the relevant projects, which were seen as being part of its own authority. Of course there have been

[41] The example of implementation of information systems for the peripheral health systems (PESYs) is evocative. One information system was allocated to each PESY, with central coordination. Some PESYs wanted to do the IS on their own so as to be in control of the project; others asked the IS SA to get their specifications and arrange the public call for tender and the running of the project; the latter cases were successful, while the former were not, due to lack of knowledgeable staff to run the projects.

exceptions, e.g. the Ministry of Education which was the fastest in implementing projects as it has understood from the beginning what was involved. [42]

Further structural problems were encountered and were related to the nature of the articulation and allocation of governmental power. A strict hierarchy meant that an advisor or the IS Secretary himself could not overcome the central place of each minister in the exertion of authority (YP 2007). Taking into consideration that the OPIS was a horizontal programme spreading across different public administration agencies, this posed a problem of coordination across different ministries. At the same time, the involvement of the ministries was at the level of administrative cadres, while the ministers themselves never participated directly in the programme: while in Europe the necessity of involvement at the highest level was at some point acknowledged, this was not the case in Greece, as the involvement of a minister would necessitate the restructuring of the public sector (TK 2005). [43]

Indeed, a certain degree of 'indifference' to follow the programme closely was observed at the high political level (ministers and Prime Minister) and was related to ignorance: "*Ministers did not understand that it was not only a matter of putting computers in, but that one should redesign functions and processes, power structures and create a new culture. Theoretically they understood that computerisation was*

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[42] As the 2000-2002 IS Secretary recollected, this success was also due to a decentralised implementation of projects: "*The Ministry of Education had a long history (since the 2nd CSF) of very large public projects for schools (say, for 5000 PCs), whereby the call for tender had gone on and on for four years without any success, because of errors, huge interests involved, frequent legal action from IT firms, etc. We, on the contrary, adopted a different logic: the creation of a PC lab in every school was treated as a separate project (so, say 3000 schools, 3000 labs, were 3000 projects); for each of them (about 20,000 euros) we prepared a draft call for tender for the school committee (made up of the director of the school, the parents' association, teachers, local authorities etc) identifying the specifications (e.g. for PCs, printers etc.) and asked them to carry out the call locally. In this way we managed to equip 3000 schools within six months and overcome the delays and failures of all previous years*" (GP 2006).

[43] The reason for this has to do with the historical developments of ICTs within each ministry. Roughly speaking, telephony preceded computerisation and the introduction of IT, and the latter was followed by the introduction of the Internet in each ministry. This historical evolution was mirrored in the development of separate departments for each of those aspects of ICTs, plus another responsible for issues of procurement. The resulting fragmentation impeded the integration of the ICT departments at a higher level, which could facilitate operations close to the minister on each occasion. Moreover, this fragmentation was not accompanied by specialisation and expertise, but rather by non-meritocratic criteria in the public servants involved, which contribute to the composition of a problematic picture.

important, but in practice they did not give to it the attention that they gave to classic things, such as a bill to be introduced; they considered IT a luxury" (GP 2007).[44]

In result, a problem of political leadership has been pinpointed, since hierarchically the OPIS mechanisms could not impose the information society agenda on ministers, while the latter were not interested enough to pay attention to ICT issues. The experience of various aspects of antagonistic or indifferent behaviour of certain political entities involved has given rise to the claim that the vision needs to be held very high in the political authorities, ideally at the prime ministerial level (YP 2007). For this reason, there have been repeated proposals in the Digital Strategy 2006-2013 (e.g. from SEPE) for having an ICT unit working closely with the Prime Minister (as in the UK), or a Minister for IT (YS 2006); nonetheless, this was never attempted, as it would have created tensions with other ministries (YL 2005, VA 2005).

5.3.2. Inter-party rivalries

Rivalries were also observed between parties and different governments. A characteristic incident showing the lack of inter-party consensus regarding the promotion of a common goal was the allocation of projects relevant to the SYZEFXIS[45] project, which was done through an inter-party committee. A senior Ministry of Internal Affairs figure recalled: "*The then opposition had declared that they would not participate in the process. In the discussion all proposals were by*

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[44] The story offered by an IT executive is relevant and refers to the issue of electronic cards that would enable the citizens to deal with the public sector in a quick, efficient and secure way. "*An employee of the Ministry of Internal Affairs and myself went to Finland to participate in a relevant group; I realised that nobody at the ministry was really interested, although I assumed that this employee did update them as to the experience of the trip. Eight years down the line and this has been abandoned, though other EU countries have proceeded with this project. And it is a shame, as these cards would enable also the use of digital signatures, something which is quite time-consuming for Greek citizens and relevant public sector employees whose time is spent on legalising signatures*" (SK 2009)

[45] SYZEFXIS, as well as the Citizen Services Centres (KEP) are OPIS projects run by the Ministry of Internal Affairs. SYZEFXIS is a large project (74 million euros) to provide an infrastructure for exchange of information of administrative nature (e.g. births, marriages, deaths etc, justice, road and urban planning and many other types). Its objectives are the improvement of public services functions through the upgrade of telecommunications infrastructure between them and the provision of integrated services to citizens using modern and user friendly government information and transaction systems.

consensus granted to the different recipients. Subsequently, in Parliament, the shadow government was questioning why we had accepted the proposals" (PG 2006). This is indicative of the shadow government tactics that were taking place. These were often accompanied by sheer ignorance of what was at stake. A characteristic example, provided by the former IS SA president, has to do with the discussion in Parliament of Law 2860 for the management of the 3rd CSF in November 2000: "*Many MPs could not understand what the IS SA was for. They thought that it was just a private company providing education like so many others. And there was a lot of suspicion that the IS SA would just waste funds*" (SP 2006).

Various complaints have been expressed regarding the impact on IS of the change of government (from the centre-left PASOK to the conservative New Democracy) with the 2004 general elections. On one level, communication between the pre-2004 and the post-2004 officials has been characterised as "limited", "superficial", "quite detached" and "not substantial". According to various information society officials, this resulted in severe delays and an overall stagnation of the OPIS.

According to the then president of the IS SA, by 2004 a certain momentum in the OPIS had been achieved after having spent considerable time to set up the mechanisms and be consistent with the formalities of the public administration. After the change of government in 2004, the new OPIS authorities tried to some extent to start from scratch, which had an impact on the performance indicators for 2004 in terms of projects allocated, but also regarding social indicators such as diffusion of Internet: "*As a result, in 2005 about 180 million Euros were moved from the OPIS to other operational programmes, which clearly indicates that the OPIS had lost some of its momentum (or that the expectations had been too high). I think that there were areas that were moving quite satisfactorily at the time, e.g. the modernisation of public administration and that their momentum should not have been lost*" (SP 2006). The 2002-2004 IS Secretary added: "*The 2004 government froze things for 18 months before identifying the same problems. This shows another Greek idiosyncrasy: elsewhere there could have been a relative continuity in the strategy. The fact that different governments are antagonistic with each other is a significant facet of Greece*" (YC 2008).

The summer of 2005 saw the announcement of a new Digital Strategy, on the basis of which different opinions have been expressed and party antagonisms have taken place. For the pre-2004 OPIS personnel, the new strategy tried to do away with anything that had been established by the PASOK government. It did not include any significant new elements, although it could have done so in order to make adjustments according to previous experience. As such, it was a project management mistake, as it just delayed existing projects and questioned what had been hitherto achieved: "*What should have been done was that the new strategy should have been targeting the fourth CSF, completing present and preparing for future projects. An intermediate evaluation of 2004 should have provided an assessment, set targets for the remaining third CSF (to finish with digital infrastructures, broadband in the public sector, provide digital content) and then articulate the finished projects with new projects of the 4th CSF in order to provide services building on these infrastructures*" (SP 2006). On the other side of the argument, the new OPIS personnel claimed that the criticisms expressed were not constructive and did not promote consensus and cooperation. (YL 2005, VA 2005).

At a more significant level, there have been 'accusations' regarding the overall goals and directions of the OPIS and the Greek IS: "*In the period 2002-2004 the OPIS was seen as the vehicle for achieving real convergence with the EU average through achieving digital convergence; this was after the EMU (which had established nominal convergence); the goal of digital convergence was abandoned by the new government .... Previously there used to be an IS strategy which attempted to identify the problems of ICTs in Greece, build infrastructures and generate a critical mass of users. Since 2004 we have had a paradigm shift, we have been characterised as 'socialists' and the new approach has been neoliberal*" (YC 2008).

Notwithstanding the emotional charge of some of these and similar remarks, it seems that a different approach to the implementation of IS projects was introduced in 2004. In the period 2002-2004, when certain experience of project implementation had been accumulated, the issue of "strategic management" of implementation came into prominence. This was informed by the realisation that the recipients of the projects (ministries, local authorities and so on) were not in a position to monitor and implement on their own. The then IS Secretariat placed great emphasis on "universal

responsibility" as far as the implementation of projects was concerned. Implementation would be decentralised, but with central monitoring and shared responsibility, as this was considered the most important issue in the Greek context. [46]

After 2004, however, the new IS officials adopted a more detached, hands-off approach. The new IS Secretary himself declared that his role finished at the point when a particular project was incorporated within the OPIS and that implementation rested with the final clients (e.g., ministries or local authorities), something which was seen as amenable to recurring implementation problems. This approach also entailed that there was not any more a central allocating mechanism and that projects were allocated on an ad hoc basis, which provided the seeds for the operation of clientelistic relations and corruption (to be discussed in the next section).

5.4. Bureaucratic legacies

Antagonisms, coordination problems, limited knowledge and awareness and conflicts of power and authority in political institutions have been complemented by implementation difficulties emanating from the bureaucratic structures of the Greek public administration. Bureaucratic structures provide a significant structural dimension to state mechanisms, as well as being crucial in providing developmental advantage, as identified by Weber and by contemporary analysts (Evans 1995).

As mentioned in chapter 3, the Greek administration is often taken to belong to the southern European model of bureaucracy, characterised by pervasive clientelism, corruption at lower levels, uneven development of institutions, with some departments overstaffed and others underdeveloped, as well as rigidities and over-legalistic frameworks (Sotiropoulos 2004, 2006). To examine the function of these features in the implementation of the information society initiatives in Greece, we differentiate between two levels of administrative context: firstly, that of the design and

[46] To promote this logic, a Crash Programme was designed and put into practice by the Ministry of Economy and Finance in order to form a uniform strategic management and coordination mechanism that could speed up the implementation of the OPIS. This was an orchestrated action that was discussed with all parties involved in implementation (since November 2002); it started operating in 2003 and brought about significant and tangible results but was then frozen with the change of government.

management of public sector projects, which involves project managers, ICT experts within public agencies and some high-level bureaucrats; secondly, that of middle-level and lower level civil servants which can be seen as the users of ICTs in the public sector.

5.4.1. Design and management of ICT projects

Despite a comprehensive vision and articulation, the implementation of the programme has suffered from fragmentation. As the public authorities involved in the implementation have lacked central and comprehensive planning processes and mechanisms, their suggestions have taken the form of fulfilling ad hoc demands and deficiencies, rather than becoming part of an overall strategy. In any case a systematic attempt to collect appropriate data and identify problems has been missing (LT 2005). This initial fragmentation has been accompanied by a secondary level fragmentation emanating from middle cadres (e.g. advisors or consultants operating across ministries and other public agencies and having a coordinating role in the implementation of the OPIS). These have often been politically appointed and therefore changeable in line with government alternations; moreover, they have aligned with various interests (including political and professional) adding to the unpredictability, asymmetry and uncertainty in the direction of the overall programme (TK 2005).

Fragmentation has been coupled with problems of cooperation, including the above mentioned reluctance from ministries to delegate responsibilities to the OPIS bodies for project implementation: "*What we underestimated and should have intervened more drastically with the weakness of authorities (ministries, municipalities, local authorities, NGOs) to implement projects, as well as their frequent resistance to allocate the implementation control to the IS SA, which had been set up for this purpose, and was more suitable than the specific authorities for designing, running the competition, allocating and implementing ICT projects for the public sector*" (GP 2007).

All the ministries had been asked to make a business plan for the information society in advance; some of these plans were quite grandiose, but the means for implementation were lacking, both in terms of finding appropriate personnel and in

incorporating a project in their daily routines.[47] It has also been admitted by several senior Managing Authority personnel that there was (at least in the beginning) insufficient acknowledgement of the fact that users had to be trained in order to overcome difficulties associated with the introduction of new ICTs.

For the above reasons, serious delays in the implementation of projects have been observed. Further, problems of coordination and central design have contributed to this overall picture of imbalances and discrepancies, with ad hoc and random implementation of projects. As a result, certain projects moved forward faster than others, with significant negative impact on the mutual dependencies and articulation between different projects (TK 2005). Fragmentation and limited coordination in the implementation of most actions has often limited awareness of the integrative potential associated with ICT projects. The requirements for concurrent technical, as well as organisational interoperability, institutional change, transformation of practices, educational programmes, culture and attitudes, necessary for any successful information system set up, have frequently escaped the implementation bodies (public authorities). [48] Technological fragmentation within public organisations and perpetuation of quite obsolete structures (e.g. different departments for telephony, IT and Internet, and different departments dealing with procurement for those technologies) and the absence of ICT strategic units in ministries have been pointed out as factors contributing to the approach of ICT projects through the logic of "*automation of existing processes and day-to-day operations*" rather than as a means for re-designing the state-citizen relationship (YL 2005).

Indeed, the observed persistence in traditional ways of approaching ICTs as large automation projects in the public sector, rather than thinking of them in new innovative ways was a very important aspect. Although the central mechanisms (the Ministry of Economy and Finance and the bodies established by the OPIS) were

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[47] As an example, the Ministry of Justice had asked for 60 billion drachmas to implement IT projects, but until 2007 they had implemented projects of the order of less than 1 billion drachmas.

[48] In the context of the Olympic Games, the Ministry of Justice implemented a project giving information about the crime record of an individual; this project was not linked with any other operational procedures of the relevant authorities, but remained a standalone application (LT 2005).

espousing the logic of innovative approaches, the implementation mechanisms were stuck in the old, traditional ways of thinking.[49] In the period 2002-2004, certain senior actors (e.g. in the Managing Authority and the IS Secretariat) were pushing towards smaller and flexible projects alongside open source software; it seems that subsequently these ideas were more or less abandoned and the post-2004 government retreated to the traditional ways of thinking, as is perhaps evident in the 2006 agreement with Microsoft for software procurement in the totality of the public sector.[50]

5.4.2. Reception of ICTs in bureaucratic practices

At the level of rhetoric and expectations "*there has been the illusion that through computerisation the public sector will become organised, while in fact organisation is a prerequisite for automation in most cases*" (TK 2005). At the level of practice, however, reorganisation has happened to a limited extent by the introduction of the Citizen Service Centres and the TAXIS project of the Ministry of Economy and Finance, whereby computerisation has brought some order to the fiscal system.[51]

There was certainly the expectation that the same would happen in other areas. In education, the introduction of infrastructures and systems has significantly improved research (through better access to various sources of information through high speed systems and networks on a par with those of the very advanced countries), but has not changed administrative processes, nor the ways in which education is provided.

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[49] For instance, the electronic public procurements, a project still ongoing, the initial cost and architecture chosen was based on large systems that provide all possible applications (what OECD calls 'whales'), rather than small and flexible systems, taking advantage of the Internet and carrying out a small number of particular applications or tasks; as the 2002-2004 IS Secretary recalled, when a delegation was sent to Finland and witnessed the Finnish experience of a similar project, there was a rethinking of the project in new terms, which also led to substantial cost reduction; however the 2004 elections came and it was never implemented (YC 2008).

[50] This agreement was quite controversial and stimulated the interest of the vast majority of the Greek press; the main argument against was that the government had made a deal with a firm that had often violated competition through monopolistic behaviour although there were more effective and cheaper alternatives (Mylonaki 2006).

[51] It is interesting to note that the term TAXIS, which includes the prefix 'TAX' and the suffix 'IS' and refers to taxation and information systems, is a quite evocative name for a project intended to bring order, as 'taxis' is also the word for 'order' in Greek.

Why has the introduction of ICTs not been accompanied by the reorganisation of the public administration? The classic problem of resistance from the public servants has been provided as the quick answer. Frequently, resistances are attributed to technophobia, ignorance and the uncertainties related the re-allocation of power. A blend of these factors seem to have played a role: on the one hand, "*the administrative mechanisms and the civil servants have not understood the meaning of interoperability, at the technical, organisational, functional level*" (TP 2006); on the other hand, the fear has been observed that, "*if the new ICT projects were introduced the personnel would be made redundant or would not have any reason to exist any longer*" (SK 2009); at the same time, resistances have been due to "*inability to change one's practices*" (YC 2008).

Indeed, resistances seem to have been mostly due to the fear of losing power when procedures become codified and automated. The point of releasing power has particular resonance in the 'flexible and untidy reality' of the Greek public administration, involving the 'absence of systematic codification of law that creates areas of legal uncertainty' and 'informal practices' (Spanou 2008, p.153), through which power is exercised and benefit is extracted by large segments of civil servants in their daily working practices. The introduction of ICTs in the Ministry of Economy, for instance, meant that the employees involved would no longer be able to negotiate with firms and citizens regarding their taxation and get commissions for providing favourable tax bills, as everything would be automated and codified. This is the reason why the introduction of TAXIS necessitated the provision of some allowance to employees. Likewise, in the health sector, despite efforts over a number of years, information systems have not progressed at all, as circuits of black economy and informal practices in health [52] have been resistant to any introduction of new technologies.

The issues referred to here are often 'petty corruption', e.g. providing informally a small service through deviation from the rules in return of a small sum of money. A

[52] The famous 'fakelakia' ('small envelopes' with often large amounts of cash hand-delivered from the patient to the doctor operating on them) has been a common practice in health administration in Greece.

senior executive of a successful IT firm has given concrete evidence: "*We have installed in all tax revenue offices credit card facilities that citizens can use to sort their tax payments. Out of one hundred such offices these are used in possibly five, because the cashiers do not want payment by credit card, since they make a little extra if the payment is in cash. Another example is the installation in these revenue offices of waiting systems; in various offices they are systematically out of order, in actual fact unplugged, so that certain customers can be given preferential order and the clerk can make a small income out of this*" (SK 2009). In general, the old ways in which things used to be done are upset by ICTs and as a result certain employees who benefited from the old order end up empty-handed.

On many occasions, corruption has indeed been singled out as the gravest issue. The IT senior executive referred to above is one of many disenchanted with public sector ICT projects: "*ICTs provide transparency which means that a lot of informal illegal state practices are jeopardised. Neither the previous nor the existing (after 2004) government managed to tackle this issue, or they did not want to, because of the party-centric character of the public mechanisms and the accompanying clientelistic relations of recruitment to these mechanisms. If this problem is not addressed, the information society in Greece will never materialise*" (SK 2009).

5.5. Public procurement and the ICT sector

As mentioned in chapter 3, state/economy relations in Greece have been historically characterised by over-regulation and strict legal frameworks, while they have also suffered from an unhealthy relationship of mutual dependence, involving corruption and patronage in the allocation of favours and contracts (Kazakos 2001). It seems that the characteristics of Greek capitalism and its relationship with the state have been reflected in the state/ICT sector relations in Greece.

Incomplete industrialisation and the resulting small market have left their imprint on the Greek private sector and economic activity: "*Investment is very limited; the private sector in Greece is mainly retail, with very low value-added, waiting mainly from the public sector to implement projects*" (TP 2006). Following this pattern, the ICT sector presents limited scope, with very few medium and large enterprises and a

vast majority of small firms (chapter 4). Interviewees have highlighted the fact that even a small number of large firms are perhaps too many for a limited ICT market (YV 2005, AT 2009).

Apart from certain exceptions, the private sector is not particularly dynamic and this tendency is dominant in the ICT sector as well: "*In most countries, the ICT sector pushes the public sector forward, while here this does not happen; on the contrary, often the public sector needs to make the ICT sector aware of developments. The ICT sector does not generate demand on its own, but awaits the generation of demand from the public sector, which it subsequently tries to satisfy*" (TP 2006).

As the public sector in Greece controls the largest segment of the economy and of the IT sector in particular, it influences de facto both the course of the market at large and specifically of the IT market. The public sector is the largest ICT buyer, the others being the defense sector, where procedures are non-transparent, and the banking sector which is the most developed sector in Greece. Within the public sector, the largest user of ICT products and services is the education sector (something that is observed internationally, too). The health sector has also a substantial share in the ICT market on an international level, but not in Greece: "*In the light of the dominant presence of the public sector, the structural problems of the system of public procurement are the key to understanding most of the problems that both public projects and public ICT projects encounter*" (TK 2005).

Public procurement involves goods and services purchased by public agencies and organisations (both central and local) for the purpose of carrying out their activities and serve their functions. It is intended to support administrative and regulatory policies, construction and modernisation of public infrastructures (roads, railways, electricity and telecommunications), provision of public goods (such as health and education), supply of central productive units and implementation of industrial programmes. In Greece, public procurement has exhibited the following characteristics: a) it tends to be monopsonistic/oligopsonistic and monopolistic/olipolistic; b) local firms are protected from international competition, but cannot fulfil demand; c) the purchasing process shows multiple difficulties in evaluating proposals and is subjected to external influences, with resulting conflicts

and tensions. Public procurement has not functioned as a developmental mechanism for the supplier industries due to a number of Greek particularities (small market, absence of industrial tradition, shallow technological activity with limited local research and development, small knowledge content, insufficient production capacity) plus a protective attitude from the state, which often contributes to complacent behaviour on the part of the suppliers (Caloghirou 1993).

5.5.1. ICT firms: grandiose expectations, myopic behaviour, clientelistic practices

Prior to the 1999 White Paper, which was the most comprehensive attempt to produce a strategy at this level, attempts at IT introduction in public organisations were more or less compilations of demands originating from ministries: "*In the best case these were designed by ministry administrative experts, who followed more or less developments at the international level and determined roughly what they needed; in the worst case IT firms just submitted a list of projects that they could undertake and the products they could supply (with generic names) through their relations with the administrative cadres under their influence*" (TK 2005).

This path dependency of the IT sector has determined to a large extent its behaviour in the context of the OPIS in particular. In the beginning (around 1999) the development of the information society in Greece was not given attention by the ICT executives. This was a time where a stock market frenzy had conquered the country and all were absorbed in stock market promises. Individuals were gambling with shares for quick profit and executives were seeking to maximize profits by buying and selling firms. After the stock market bubble burst and many firms and individuals went bankrupt, the ICT sector turned to the OPIS and regarded it as a saving device. Due to the large budgets involved, most ICT firms decided that they had to be part of the picture. The logic was that the OPIS would enable them build expertise in various applications and services which could then be adjusted to be sold to the broader regional market: "*With this in mind, there were examples of firms which used to employ 200-300 individuals that through mergers were turned into groups with 1500 or more employees and that were transformed from distributors of IT products to firms with heterogeneous and ill-defined business objects*" (YS 2006). Many ICT firms over-invested in anticipation of

the OPIS projects and employment in the sector augmented substantially between 2000 and 2003 (LT 2005).

Under the circumstances, SEPE and the ICT firms were exerting pressure on the OPIS management authorities for the IT projects to begin as soon as possible, at a time when the mechanisms for running the OPIS were just being put into place and there was relative ignorance as to the specifications that the projects involved. The catchphrase: "*Where are the projects?*" which the ICT sector was putting to the OPIS people, evokes the atmosphere of the period. As the former head of the SEPE eCommerce Committee admitted: "*It was a mistake for SEPE officially to keep pressing and seeking to satisfy the demands of certain firms such as Intracom*[53] *and others, instead of foreseeing the incapacities of the mechanisms to run these projects and considering alternatives, e.g. start investing in other areas, for instance the Balkans*" (SK 2009).

However, this attitude was also linked with increasing expectations that had been cultivated by the state and eventually were not realised, something which created tensions. For some, it was a matter of advertising the OPIS in a wrong way: "*When the OPIS was designed, it was publicised as ICT projects, which was not correct. The ICT firms thought that the budget of about 3 billion Euros would be divided among them and that it was all about ICT projects in which they could sell products and services. However, the OPIS was not only ICT projects. It was also about restructuring of the public sector, soft initiatives such as entrepreneurship, education and training. This was a wrong way of advertising it and it was received in a wrong way by the IT sector, they thought that it belonged to them*" (YL 2005).

For most interviewees, however, it was the ICT sector that could not grasp the breadth and depth of the OPIS: "*We wanted to show that IT was more than the ICT market and the ICT public projects, although the ICT sector was pressing us too much towards this direction. The sector was only interested in big public projects of ICT procurement, while we were emphasising that this was but one aspect, albeit the most*

[53] A well-known large Greek IT firm, founded in 1986, which in the period of Simitis governance became OTE's major supplier.

tangible. We were interested in a broader framework, i.e. imbuing to an SME the logic of doing business over the Internet, or to an employee the logic of educating themselves in basic IT skills. Or making a family aware that their children should acquire IT skills and connect to the Internet, including letting them know of potential dangers of surfing the Net" (GP 2006).

In any case, it seems that the ICT sector has approached the information society as separate projects, rather than a whole social transformation. Moreover, many interviewees have identified an outlook which has been about targeting quick sales of equipment and quick profit: "*The ICT sector has always looked at the OPIS as a programme out of which they would amass riches, sell products, etc. They did not have a more ambitious and more constructive positioning regarding the information society in Greece*" (YC 2008). And more: "*The ICT sector was oriented towards the commercial part, i.e. to bring and sell computers, rather than develop and provide services; this was not a developmental logic, but rather a short-term profit logic, which in combination with bureaucratic evaluation procedures, an inflexible regulatory framework, and non-transparent procedures, created certain deformities*" (PG 2006). Supply and demand were therefore at a mismatch: "*While projects were orientated towards provision of services, the IT sector had been used to providing only 'boxes', hardware equipment, not services*" (JK 2006). Indeed, the term 'box movers' was coined to signify ICT firms who were limited to acting as distributors of hardware equipment (XK 2005).

Instead, many interviewees have suggested that the way forward is not to sell computers but to generate an environment of demand; not to wait to be part of a big public project (e.g. TAXIS), but rather to try and contribute to the creation of small projects close to local needs and in cooperation with local authorities. [54] Further, the need for IT firms to be more creative and try to develop innovative service and software solutions based on the needs of the (small) Greek market has been proposed:

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[54] For instance, in the case of broadband infrastructures for the SYZEFXIS project, the private sector was waiting for OTE (i.e. the public sector) to run the project, instead of approaching directly some local authority for the creation of an alternative infrastructure (a fibre optic ring, for example). In the few cases where IT firms did try to develop alternative infrastructure, they faced resistance from the municipalities, which treated them with mistrust (TP 2006).

"*Software providers cannot be based on the logic of retail any longer, e.g. taking Microsoft products and reselling them to make profit, as there is no value-added in this way and these products are already expensive, so profit-making opportunities are limited. Customised products, based on some general platform, which however can be adapted to serve the specific needs of the small business client, are what is needed, while general purpose large scale solutions are suitable only for large enterprises-clients*" (TP 2006). For others, the ICT sector is trapped in an old, pre-Internet, logic of automation: "*They do not seem to understand the modular character of ICTs, the fact that nowadays some things you can readily do through given platforms (e.g. Google) and it is a question of adding content and created added value. They are interested in how much they can sell and to sell what they have*" (YC 2008). Interviewees have also pointed out that the OPIS should not have been the only target of the sector.

Moreover, clientelism and micro-corruption have been frequently involved in project allocation and have been accompanied by a defiance of rules and codes of conduct during implementation. Given the degree of development of the Greek ICT market, firms resort to all methods and means available to succeed in getting a project or in preventing others from doing so. More specifically, there has been observed the phenomenon of a small number of hegemonic firms able to appropriate the majority of projects due to their capacity to take advantage of their relations with the public sector (e.g. personal relations with ministerial personnel), with obvious implications for fair competition. [55] One such case has been Altec, one of the most hegemonic IT firms, particularly regarding projects for the Ministry of Internal Affairs, where it has enjoyed certain connections. Other firms have been dominant in other areas, for instance Intrasoft with regard to the TAXIS project, as well as a lot of projects within

[55] A senior executive of a very successful IT firm active in the retail sector provides an example: "*We applied for the security component of the SYZEFXIS together with KPMG, the Athens Stock Market and some Swedish firms; there was a competing proposal submitted by OTE and some other players. We failed to submit a particular certificate saying that we had not gone bankrupt (which of course we had not); this was notified to us and we did submit it the following day. However, on this basis only, our proposal was rejected without it being considered. For such a crucial project, which had to do with the security of public transactions, a serious proposal was rejected, without assessment, because there were interests involved that wanted OTE to get the project. We did resort to justice, but in vain. Such examples act also as disincentives for any foreign interests and potential investment involved*" (SK 2009).

the Ministry of Health. The practice of such firms is to establish such connections and relationships with ministry employees and cadres, thus getting early access to information regarding the specifications of the project and as a result comparative advantage in the preparation of their proposals for the project in question (RA 2008). In many cases, these dominant firms are in the position to create the specifications themselves (for instance Intracom with OTE in many cases). Such phenomena led one interviewee to remark: "*Characteristics of the industrial era are replicated in exactly the same way today. We have state-dependent enterprises and the logic of appropriation of resources and funds by the small segment of 'the selected*'" (JK 2006).

One recurring practice, demonstrable of the dialectic between inadequate public expertise and IT firms' behaviour has been the Greek public procurement particularity of setting technical, rather than functional specifications. This means that instead of identifying just the needs that should be served by a specific project, these needs are often made more specific in terms of technical characteristics of the ICT solutions suggested. In the beginning this was demanded from the OPIS mechanisms in order to get concrete specifications; it was seen as a necessary evil. However, it soon became a fruitful field for the operation of clientelism: "*When we pressed for having functional specifications in calls for tender (i.e. identifying the ICT needs in non-technical terms, not in terms of particular technical specifications) we were faced with vehement opposition. This is because some ICT firms wanted the calls for tenders to be technically specific so that a particular, well-connected firm, would have competitive advantage over the others*" (YC 2008). Indeed many interviewees, both from the public sector and from the ICT sector, have confirmed that this is often the case (RA 2008).

Technical overspecification has as a result often given rise to appeals claiming that the way specifications are presented they favour the products of one firm and not another, thus damaging fair competition. A point stressed is that the employees preparing the specifications are often assisted by external academics in the setting of the specifications, something which bears the question whether these academics were independent or part of the payroll of a certain firm. Further, the committees deciding on the winner of a competition have often lacked respect and trust, something that has

also given rise to objections. Last, there have been phenomena whereby an objection from firm A to firm B for project X would lead to retaliatory action from firm B on firm A for another project Y.

Additionally, these tactics have generated a number of pathogenic practices. For instance, it is not uncommon to get appeals on the basis that the product offered is not exactly that mentioned in the specifications, although it might actually be an improved version as a result of technological evolution. In this way the process has to start all over again with delays of the order of two years or so.[56] On the opposite side, an inferior product can be specified in the first place, the reason being that the employees who prepare the specifications are used to having product A rather than B. Alternatives to competitions of this sort have been considered, but reservations have also been expressed: "*Instead of this system, a better one would be to engage certain firms in long-term contracts and get from them services on demand without having to conduct competitions. But this presupposes a robust and independent public administration. If you do not have this you go by the book as far as specifications are concerned and then you get the objections mentioned above*" (GP 2007).

In cases when a certain firm is assigned with the implementation of a project through favouritism, formal procedures are often sidelined and "buying one's way in" is accompanied by a defiance of rules and codes of conduct. As the exact conditions that are present during allocation of some public projects are often unclear, mistrust and scepticism have become the norm. Moreover, firms have also been accused that they have been always looking for excuses not to implement the projects (invoking inadequate budgets or other reasons) and that they are interested in signing a contract

[56] A case in point was that of an IT project that would provide a number (113) of body measurements for citizens in specially designed booths and would have been useful in a number of contexts, including clothing manufacturing. This was primarily designed for the Olympic Games of 2004 and also the Greek army which was to receive the equipment (scanners) afterwards. According to the president of the company which was given the project, the proposal for this was submitted to a relevant evaluation committee which included people from the Olympic Games Committee. This would have been very spectacular in the Olympic Games context as these booths would have provided in 20-30 seconds body measurements for those involved in the Games (including athletes and volunteers) in order for them to get appropriate clothing, something that had not happened before. The outcome, however, was that the project was ready only after the Games, because of continuous queries that delayed the process of allocation, while the IS SA, which could have given it political priority for it to proceed did not do so. (SK 2009).

and then "*managing the contract legally*", rather than implementing the project (YC 2008).

The desire of the ministries to be in control of projects, a tendency mentioned earlier, is also revealing of deeper and not always transparent motivation: "*In the best case, they want to be in control so that a project does not take place, in the worst case they want to be in control in order to allocate a project to whomever they want and get a 'commission' out of this. The ICT firms in Greece have been used to the logic that every committee for allocating, or evaluating a project will have to get a bribe and it is exactly this logic that is behind the insistence of ministries to undertake the projects themselves, expressed through immense pressures from the internal mechanisms to the minister. This is crystal clear*" (GP 2007). Generally speaking, it has been standard practice that companies enjoying direct relations with ministries would rather deal with them directly than with the OPIS bodies; by contrast, those devoid of such relations tend to opt for a more transparent process of project allocation through the IS SA.

5.5.2. Regulatory framework

A further degree of complexity emphasised has to do with legal, regulatory and institutional framework of ICT project implementation and of public procurement mechanisms on the whole. Such frameworks have been informed by the tradition of large public projects in Greece. In addition, administrative procedures have continued to be quite complicated, reflecting the fragmentation of public administration that has been formed historically. The resulting very long life cycle of ICT projects has often surpassed the time span of governments and has conflicted with the very short life cycle of many components of ICTs (TK 2005).

As there is no separate regulatory framework for services (only one framework for products), "*The minimum time lapse for a large public project (meaning over 1.5 million Euros) has to be around 14 months. If one counts the design and approval phases this becomes 24 months and frequent delays extend this period to 36 months*" (YS 2006). For an ICT project, three or four years delay means that it is highly unlikely that it will be of any use, or that it will be used for the purposes for which it

was designed. Routine projects, for instance the information system of the Ministry of Health or the Ministry of Development, have in this way been implemented (procurement has been completed), but have been of limited use, if any.[57] The example of the Police-On-Line project is also a case where the contract was signed two years after the call for tenders, by which time the hardware involved had become obsolete (LT 2005). According to a senior Managing Authority figure, the most extreme case of this phenomenon is in the health sector, where "*everything bought ends up locked in the basement*", where products and solutions are provided but never used. In the rest of the public sector often a small percentage of the capabilities of a system are put into use, e.g. from a system of 2 million Euros certain applications of 100,000 Euros are deployed, while the rest is not taken advantage of (TK 2005).

The vast majority of the projects are co-financed with EU funds, making procedures even more complex, with extra monitoring mechanisms and increased transparency and accounting demands. The EU has placed only a small number of demands regarding projects: for instance, that the projects benefit all citizens equally, that there is transparency in the implementation and that the outcomes are positive; however, "*We divided each of these imperatives into thousands of other small regulations that need to be followed. The regulatory framework is one important reason why significant delays occur. It is 'sick' and the procedures need to be followed to implement a project are extremely complicated. It is a very old framework, made up of literally volumes of legislation, some of which dates back to the 19th century*" (YL 2005). Many interviewees from the ICT sector have complained that this quite stiff framework makes the application process extremely cumbersome and time-consuming (TZ 2006, GK 2006, TA 2006, YP 2007).[58]

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[57] On the one hand, due to a multitude of laws and regulations, it is difficult to capture the complexity of a public administration task, and to achieve its rationalisation and standardisation. On the other hand, when this happens, the resulting information procedures are often narrowly conceived and cannot anticipate changes in the practice that might occur before technical procedures and their components are implemented.

[58] For instance, firms need to submit separate proposals (literally volumes of documents) for different projects and this generates limitless paperwork and involves a huge amount of time. Nonetheless, changing procedures has also been considered very time-consuming. "*At one point we pondered the possibility of having a 'bank' for firms to submit certificates so that they do not need to submit certificates every time they enter a tender for a project. Although there was general agreement and IT firms endorsed this, we soon realised that it would take three years to change the procedures because of various legal complications, so the attempt stopped there*" (YL 2005).

The issue of maintenance of projects is indicative of the problems posed by the regulatory framework. This came up during the group interview with members of the SEPE Public Projects Committee, whereby a great deal of time was spent trying to resolve the following 'puzzle': how to reconcile the necessity to provide maintenance in public projects (something legally binding and seen by law as important for the public interest) with the fact that remuneration is never expected to be received for maintenance (due to delays and anomalies involved in public sector projects and the long-term indifference of public sector officials and the state expectation that maintenance be free of charge (GK 2006, TA 2006, TZ 2006, KR 2006, NP 2006, TH 2006, YP 2006).

A similar problem was experienced in the case of the army booths project mentioned above: "*We provided a warranty period and also suggested that maintenance should be carried out after that period. The booths are indeed in place now in certain army camps. However, nobody has renewed the maintenance contracts: the IS mechanisms claim that their role was just to allocate the project, the Greek army claims that they do not have any budget for this. In effect, we carry out the maintenance free of charge at the moment, while the system is not used. This means that for each cohort they order more or less all sizes for each soldier, which results in a waste of many millions of Euros, instead of having an accurate picture of the needs and order accordingly. Obviously some interests are involved there (possibly of the clothing manufacturers). For all these reasons we have decided not to deal with public projects any longer*" (SK 2009).

The central monitoring mechanisms for the OPIS (Managing Authority, Monitoring Committee, IS SA, Observatory) have often been unable to intervene effectively in a chaotic system. An issue identified is the abundance of funds in certain areas of the OPIS and shortage in others (SP 2006); moreover, the funding agencies involved do not have sufficiently large numbers of adequately trained accounting managers to monitor the implementation of related projects. Overall, implementation difficulties had been in the beginning underestimated and there was an expectation that with the mechanisms in place, such as the IS SA, implementation would proceed; nonetheless, the IS SA quickly got overloaded, while other supportive mechanisms have not been deployed properly (YC 2008).

5.5.3. OTE: the politics of technological modernisation

A complex state/economy relationship can be exemplified by OTE, the former public telecommunications operator in Greece. Founded in 1949, it had been the monopoly service provider before liberalisation and has played a controversial role in the evolution of the information society in Greece.

OTE has in practice been the formulator of telecommunications policy in Greece, mainly because of lack of relevant expertise within the ministries of National Economy and Finance and of Transport and Communications. The latter has designed the general directions of policy and public procurement, but OTE has determined the strategy of the sector (Caloghirou and Skayannis 1995).

OTE has historically been more advanced in technological terms than other public utility organisations in Greece, which, combined with its monopoly status, has enabled it to attract investment and generate wealth. Nevertheless, particularly during the 1980s, when investment decreased substantially, it had a negative image in the Greek society, due to its poor telephony service (long waiting lists and high prices, at least in long-distance calls). In 1985, following a presidential decree (58/1985), it became a socialised public utility: certain changes were introduced, including the participation of employees and of certain user group representatives in the executive board (Caloghirou and Lioukas 1995, OECD 2001).

In the beginning of the 1990s, OTE functioned in theory as an independent public utility, but in practice was heavily dependent on governments. It fit into the tradition of the Greek state's intervention in the daily operations of similar firms, as well as in procurement and recruitment policies. The complex relationship with the state blurred the definition of the telecommunications goals and modes of operation of OTE, as well as impeding decision-making processes, while the preferential employment conditions and their abuse by the employees added to the financial burdens of the organisation. For these reasons, it became part of the modernisation debate of the 1990s, about changing the modus operandi of Greek utility firms, which had been

performing poorly, while suffering from the long-standing problematic relationship between party politics and the Greek public sector.

In view of technological developments and the European Commission deadline for OTE for full liberalisation of the telecommunications sector, two issues became prominent. Firstly, in terms of procurement, the digitisation of the OTE network. This had been decided early on in 1977, started only as late as 1990, and has always been intermingled with politics and corruption. Following a relevant political decision of the PASOK government, in 1988 the executive board charged Siemens and Ericsson/Intracom with the provision of 84,000 digital circuits and 20,000 digital subscriptions with further signing of binding contracts for the full cover of the OTE digital requirements for the period 1989-1993. In honouring these contracts, the executive board proceeded with further orders of digital circuits and this initiated a big public argument about OTE becoming dependent on these two suppliers and purchasing at higher than reasonable cost. This was accompanied by intense resistance from the association of OTE employees. Proposals were made for conducting open competitions for the future digital needs of OTE, something that was never adopted; rather, all the procurement needs of OTE and (after 1998) its subsidiary firms in the Balkans continued to be carried out by the two firms in question throughout the 1990s and until 2006 when digitisation was complete. Significant bribery and illegal commission payments took place throughout this period, the most renowned case being a 1997 contract with Siemens (Stratoulis 2009, Telloglou 2009).[59] Another case had to do with the expansion of OTE in Romania, through its OTEROM subsidiary firm, which fell through, as OTE acknowledged in the process that it faced funding problems. The Greek media accused OTE at the time that through its aggressive policy in the Balkans it aimed at generating lucrative deals for Intracom, something that has been refused by the then president of the executive board (DP 2009). Many similar scandals came out about Intracom receiving OTE's state commissions as a result of political patronage.

[59] This was a five-year (1998-2002) contract between OTE and Siemens of the order of 158 billion drachmas; it was subsequently revealed that it also involved direct payments from Siemens to party cadres and OTE high officers (Telloglou 2009).

The second issue in the 1990s was the privatisation of the organisation. Two unsuccessful attempts took place in 1993 and 1994. The first, when the conservative government decided to sell a 35% share of OTE to an international telecoms operator and the stock market flotation of another 14%. The second, when the PASOK government offered a more acceptable solution to trade unions and procurement beneficiaries through a possible flotation of a 25% (of which 18% to foreign operators), keeping state control of OTE's management. Both attempts aspired to the generation of funds for the modernisation of the telecommunications network of the country, as well as the creation of international partnerships, while the first one aimed also at the modernisation of Greek telecommunications at large through a big foreign enterprise which would invest in OTEs technological and organisational upgrading (Caloghirou and Lioukas 1995). The first attempt led to the fall of the conservative government. As the management of OTE was at stake, it faced opposition from a coalition of interests (the long-term procurement private supplier who had enjoyed preferential conditions, other business interests, trade unions, media, and party factions) accusing the government of selling-out national wealth (Pagoulatos 2005). The second attempt failed as the PASOK government under Papandreou could not sell OTEs stocks at a price that would reflect the value of the organisation.

In parallel, pressures from the European Commission for quicker liberalisation of the sector in the 1990s were also coming up against huge resistances from OTE and its employees; these resistances were quite potent due to the close relationship of the PASOK government with the OTE trade unions. When liberalisation of mobile telephony occurred in 1992, two licenses were granted to private companies, but OTE continued to enjoy a privileged position as infrastructure owner and telephony services monopolist throughout the 1990s and until 2001, when the time limits of the WTO and EU regulatory reform were eventually exhausted. In the meantime, partial privatisation had re-started in 1996 under Simitis, who followed a gradualist approach, ensured the cooperation of the management of OTE and avoided open confrontation with strong business interests for the purposes of establishing broader consensus in view also of the EMU accession project. An 8% initial public offering took place in 1996 and by 2001 OTE had become the first public enterprise to be controlled by private capital; however, the state continued to have the biggest minority stake (OECD 2002). After the 2004 elections, downsizing was pursued by means of an

agreement between the new management and the trade union for voluntary early retirement.

Even after full liberalisation, it took a long time for the newly established EETT to become strong enough so as to control OTE and give the opportunities for alternative providers to function. A comprehensive strategy for telecoms liberalisation was absent and OTE was pointing out that the potentially alternative providers were after selling profitable services using its own infrastructure, as opposed to developing alternative infrastructures: "*The Ministry of Communications was totally incapable of designing and implementing projects and the telecoms strategy was taking place in the OTE building, not in the ministry. Things improved a little bit with the introduction of the EETT, but problems still exist. There is still lack of human resources, of people with expertise in international practices who will know how to go about a broadband project in the periphery, competition issues, or rights of way*" (GP 2007).

The dominant position of OTE has had implications for the development of telecommunication infrastructures, notably broadband. As OTE had the monopoly of broadband, it obstructed developments in various ways (e.g. by not providing broadband services at all, or providing them at very high cost). The broadband strategy was submitted to the European Commission in 2003 with specific projects and budgets, but was thereafter heavily resisted by OTE and the status quo around OTE. The OTE executives clearly understood that the development of broadband was a matter of public interest, but chose to operate under a profit-making logic.[60] In relevant negotiations around broadband, OTE executives were pushing for the subsidisation of demand by the state, i.e. subsidisation of big user groups (e.g. students) in order to generate demand. The OPIS mechanisms (at least in the period 2002-2004), however, were not prioritising the subsidisation of demand, because they

[60] On that basis, OTE was accused of showing significant social and political, but also technological short-sightedness. During discussions about broadband infrastructures (of which OTE was sceptical), it was decided that optical network units (ONUs) should be installed close to households (at curb-level). This was considered a very progressive development; however, the limitation was that these units would not support broadband technologies such as DSL, as they were based on ISDN technology. It seems that nobody could foresee the impact of DSL at the time, although it was already well-known in Europe, or simply OTE had to sell the ISDN boxes they possessed, which manifests a logic of profit at the expense of possible more developmental alternative approaches (VM 2005).

saw this as perpetuation of existing arrangements and high prices; rather, they promoted the subsidisation of supply, i.e. of alternative providers so as to build alternative infrastructures (VM 2005). Later other players entered the market, but they were dependent on OTE, since they were using OTE's infrastructure. In any case, the multiplicity of stakeholders, both public and private, involved in the broadband strategy and defending their own interests have contributed to delaying broadband progress (Caloghirou and Constantelou 2006). The improvement in broadband indicators after 2004 has been due to the substitution of ISDN by ADSL lines and the increasing pressures on OTE for opening the market. However, monopoly effects have remained since the vast share of the market still has to use OTEs infrastructure (and pay accordingly) in order to be able to provide telecommunication services (YC 2008).

In 2007, Marfin Investment Group acquired 20% of the organisation, which was then sold to Deutsche Telekom, itself holding a total of 25% in 2008. By 2009, government was a minority shareholder with 25% of OTE's stock, but did not have any control over management and procurement processes. Since July 31, 2009, following the sale of a further share of 5%, the Greek state holds 20% and Deutsche Telekom 30%.

In summary, OTE has been the pivotal organisation in the telecoms landscape in Greece. Significantly, it has been seen to perform different and sometimes contradictory functions. Its inheritance of the weaknesses of the Greek public sector (public deficit and overstaffing) had turned it into a problematic public utility and thus an idiosyncratic case to be tackled beyond the common European expectations of liberalisation. Its modernisation and digitisation particularly in the period 1996-8 gave him the profile of a 'serious enterprise' with an operational plan and sales and investment policies (DP 2009), as well as highlighting its function as public infrastructure which would be the backbone of the oncoming information society. As such, it subsequently became a profitable colossus, often demonstrating a capability not always expected (e.g. investing heavily in the Balkans after its privatisation started), but also short-sightedness in its technological investment decisions. Recently, it has operated more like a private firm with huge vested interests engaging in often 'unethical' practice, including the impediment of telecommunications competition and rent-seeking by means of its monopoly infrastructure.

A consistent line throughout its history has been the systematic political interventions and political antagonisms in the process of its modernisation, together with a contradictory behaviour as a result of these political relationships (Caloghirou and Lioukas 1995). An effect of the operation of constellations of interests has been that the organisation has overall not been used strategically for the development of the telecommunication sector and the information society in Greece. And, while OTE has been liberalised from its domestic procurers, as a result of EU competition rules and corporate governance standards instructed by international investors (Pagoulatos 2005), procurement processes have continued to be laden with corruption and politically-mediated relationships.[61] To this day, OTE's modern profile co-exists with old logics and intricate business, trade union and political interests (DP 2009).

5.6. State and civil society

In chapter 3, we characterised civil society in Greece and its relationship to the state: a) formal civil society (measured in terms of organisations and participation rates) is relatively limited b) civil society organisations (including political parties) are often dependent on state mechanisms c) informal civil society is important and should be taken into account (Sotiropoulos 2004) d) formal civil society is strong in its appropriating potential (Voulgaris 2006), with interest mediation characterised by a potent rent-seeking behaviour, while the state/trade unions/business groups relations demonstrate disjointed corporatism (Lavdas 2005) e) the state has historically shown a limited coordinative capacity vis-à-vis civil society (Voulgaris 2006). During our interviews it has been claimed that: "*The role of civil society has been minimal, because civil society is fragmented in Greece*" (PG 2006).

An important aspect of the state/civil society relation and its role in IS developments has been the ambivalent rapport between the state IS implementation authorities and

[61] Recently, another big Siemens scandal caused great excitement in Greek society, as it was revealed that Siemens had paid substantial sums to the two large political parties on the eve of the 2004 election in order to be placed preferentially for the procurement of OTE, but also of the Greek public sector at large (Telloglou 2009).

SEPE. The latter has been one of the agents pushing for IS projects, albeit exhibiting a logic of dependence on state projects and relevant competitions, as opposed to really being independently proactive in IS developments. It has been following the logic of immediate and easy profit, mainly through the sales of ICT equipment, rather than concentrating on the provision of advanced ICT services and looking strategically forward to the long-term development of IS and the multiplier effects of ICT investments. [62]

In addition, our interviewees have revealed that there have been numerous occasions of stalled social dialogue between state authorities and SEPE representatives. The pressure to advertise ICT projects has been one source of adversarial relations. SEPEs insistence on a Minister for IT has been another and has given rise to a debate as to whether this would have solved the structural problems observed and whether it would have given the anticipated political legitimation. Similar issues have frequently created tensions in the state/SEPE relationship.[63]

Wider social forces and civil society groups have either not comprehended the dimensions of IS developments or have shown a logic of resistance or appropriation of the stakes offered: "*Societal groups and local communities did not help the promotion of ICTs, either because actors were acting out of their own interest and only regarding their own interest or because they were not in a position to understand*" (JK 2006). Lack of understanding coupled with resistance and appropriative behaviour has meant that the social networks and local communities that could help advance and 'propagate' the information society by increasing awareness have either been absent or characterised by inertia. This has contributed to the picture whereby the society has not overall followed IS developments, as it has time and again emerged in the interviews:

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[62] Characteristically, during deliberation processes, SEPE representatives have repeatedly reacted against the prospect of spending funds on education programmes (something that would indirectly boost demand) and have instead demanded channelling them towards direct purchases of IT equipment (TK 2005).

[63] We have witnessed this adversarial and antagonistic relationship during the announcement of the Digital Strategy in July 2005 in which we were present.

"*Greek society does not participate in this whole affair and has never understood what is there to be gained from the information society*" (TK 2005)

"*The OPIS articulated policies that were out of touch with the Greek context and were not acceptable by the Greek society* (JK 2006)

"*A dominant characteristic that has been observed since the beginning of the OPIS has been the very limited awareness of the population, and even of the ministries, vis-à-vis the information society. The needs are not clear, not understood*" (TP 2006).

This state/civil society outlook is also underpinned by a particular cultural basis.[64] Indeed, socio-cultural issues have frequently been invoked in the course of our interviews as possible answers to the question of why Greece has shown delays in absorbing ICTs and progressing regarding the IS/KBE. First of all, references have been made to the overall relation between Greeks and technology: "*Greeks understand 'easy' technologies but are not so receptive towards technologies that are more demanding and need more investment in time*" (TP). Indeed, a historical observation is that Greece seems to follow technological developments and other international transformations and shows receptiveness to new technological tendencies and innovation; however, it has difficulties in assimilating technological innovation, i.e. inducing associated productive and employment transformations, institutional modifications and attitudinal changes (Voulgaris and Sotiropoulos 2002, Caloghirou 2007).

This observation might explain the current diffusion and popularity of mobile phones, which are straightforward and easy technological artefacts, albeit significant innovative tools. Importantly, mobile phones seem to fit with the extrovert and talkative Greek culture, as well as with the mobility needs of the self-employed,

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[64] The question of culture in the information society, and in particular the extent to which certain cultural features are amenable to or unsuitable for the development of an inclusive IS/KBE has not been adequately explored in the literature. One of the few examples where culture has been used as an explanatory factor (though not the only one) has been Castells and Himanen's study of the IS in Finland. In this thesis, our intention is to avoid making cultural arguments or use culture as an explanatory category per se. However, certain cultural dimensions are worth exploring in our state/society framework of analysis as manifestations of historical trends and in interaction with the state/economy/civil society nexus that we have been applying.

which form a large employment share. But mobile phones are also seen to be important as consumer devices (e.g. with emphasis on their appearance), rather than as artefacts with sophisticated functional capabilities (XK 2005).

The above historical trend is probably consistent with the present realisation in the context of the information society that "soft aspects" of modernisation (changes in attitudes and culture) have not been successful. In this respect, digital illiteracy has been referred to as a problematic dimension and has been often culturally explained as technophobia: "*Technophobia exists and contributes to the digital gap according to age: there has been a dramatic change of ICT deployment in young groups, while the over-60 segment is lagging behind compared to other EU countries*" (YC 2008). Technophobia has been acknowledged as a problem early on in the design of the 1999 White Paper and the OPIS and certain ways to tackle it have been pursued: "*There is a kind of technophobia, particularly among the elderly, which is due to the lack of a technological culture;*[65] *this is why we tried to find vehicles for communicating the programme and ICTs in the family, through young people that could persuade their parents to use ICTs; similarly in very small businesses, of which there are several thousands in Greece*" (TP 2005).

For other interviewees, notably from the ICT sector, however, technophobia should be seen in terms of whether there is something of use for the end user (SK 2009). Language barriers and the lack of content in Greek have been pointed out as reasons why PC purchases are often not accompanied by an Internet connection, particularly among older people. For others, limited connectivity is simply due to high prices in connectivity. Changes in these dimensions are expected, as prices are dropping and content in Greek becomes increasingly available.

Secondly, the issue of investment vs. consumerist culture has been repeatedly invoked, often in a complaining tone: "*The reasons why Greece is behind in my opinion is a lack of investment culture and the prevalence of consumerist culture in Greece.*

[65] The example, suggested in the course of an interview, of a remote village population in Norway that arranged at their own initiative excavations to facilitate the passage of fibre optic infrastructure (XK 2005) is something uncommon in the Greek context.

Education has been important for the Greek family, but seen as a vehicle for economic security (not investment). Similarly, appointment in the public sector has been seen as a situation of acquiring professional stability and security. What is lacking is a culture of investment and long-term benefit. Mimicking can be a way to adopt ICTs but not investment culture. There has never been in Greece the logic of investment, only the logic of short-term, easy and quick profit. Industrialisation in Europe meant investment; lack of it in Greece meant lack of investment culture" (JK 2005)

The Greek picture can be contrasted with that of the Finnish who have always viewed technology positively and have developed a technological culture. The Finnish case is revealing of the intricate interplay between culture and the state/society relations in a national context. The above mentioned difficulty of Greece to assimilate innovation and modernisation has been historically documented and is pretty uncontroversial; for instance, there have been examples of legal reforms, which have not been followed by updated attitudes and practices.[66] A possible 'cultural' explanation of the phenomenon is the well-documented ambivalence that penetrates political culture in Greece. Following from the relevant exposition in chapter 3, this boils down to the duality of approaching politics through a lens of personal/family benefit, while being disenchanted with political life, as well as to being romantically nationalistic, but in practice undermining the state (e.g. through tax evasion) (Voulgaris 2008, p.360, Tsoukalas 1993). This cultural dimension, however, has to be seen as part of the broader structural-cultural state/society nexus which involves among else: the south-European importance of familism (with its emphasis on maximisation of welfare of family members and its detachment from broader social collectivities); the history of the civil war and the subsequent left-right social divisions; the prevalence of clientelism and the party-dominated character of politics; and, increasingly, the cultivation of individualism through consumerism (Sevastakis 2004). All of these

[66] The 1983 Family Law, which legislated a series of changes to promote sex equality in Greece, is a case in point. Among else it recognised children born out of wedlock as equal to children born in marriage. However, such changes have not been reflected in changes in practice: various legal forms routinely used still deploy the 'out of wedlock' vocabulary and have not been updated, legal decrees treat the two categories differentially, while out of wedlock children carry a social stigma, something reflected in the extreme low percentage of out-of-wedlock children in Greece (5.8% in 2007, possibly the lowest in the EU-25).

combined can be considered to have prevented the development of a universalistic culture and by extension to have deprived Greece of a socio-cultural basis for understanding, investing in and embracing the IS/KBE strategy as a broad, collective socio-economic project (apart from its consumerist aspects).

The historical outlook and idiosyncratic modes of civil society and the absence of collective and investment culture in Greece does not mean that civil society groups have been non-existent. On the contrary, there have been occurrences of positive mobilisation: the eBusiness Forum, part of the OPIS, was a very innovative process and an excellent example of deliberation; the e-Activistes online community, which has been quite popular and has attracted knowledgeable professionals; certain professional associations (e.g. the Greek Association of Information Technology and Communications Scientists and Professionals EPY in the 1980s), which have been very active in promoting the Greek IS; various Internet-based communities with a plethora of social, political and cultural agendas, for instance the Organisation for Safe Internet and the Association of Greek Internet Users.

Further, the deficit in significant civil society activity has been counterbalanced by cases of charismatic and enthusiastic individuals and isolated niches of creativity: cases in point have been a certain initiatives for broadband for SMEs, which succeeded due to some people being enthusiastic about them, as well as the EDET team which invested huge considerable passion and energy in order to overcome structural difficulties in the development of the academic network (SS 2005).

5.7. TAXIS: an exemplary case

The TAXIS project is an eGovernment application in the area of taxation in Greece. What makes it particularly interesting is that it can be seen both as a mirror of various dimensions of state structures and the state/economy/civil society relation that have been hitherto discussed, as well as an example of fulfillment of certain expectations.

The TAXIS project started in 1994 with a budget of 60 million Euros contributed by national and EU funds from the 2nd CSF. Its aim was to provide IT support to tax authorities in Athens, as well as local tax agencies all over Greece, for tax filing,

calculation and payment transactions (Stamoulis, Gouscos et al. 2001). Its deeper objective was to introduce early on to the tax system of Greece rules and discipline that would not be subject to human intervention. This involved the introduction of depersonalised rules, infrastructure, education, collection of information (which was fragmented) for the benefit of the state, but also to serve the citizens. [67] One of the most important actors, who became involved circa 1997 in his capacity as General Secretary in the Ministry of Finance, argued: "*It was presented not as an aggressive and controlling mechanism, but as a system that created the anticipation that the citizen would be liberated from dependencies and lack of transparency*" (PG 2006).

Overcoming a number of problems in the beginning, the project set off in 1996-7. A consortium around the French company Bull was allocated the hardware elements and a consortium around Intrasoft was allocated the applications. Two phenomena were observed right at the beginning. Firstly, the conflictual relations between the two consortia; moreover, the ambivalent role of the ministry, which was used as a channel of communication between the two, but was also divided and involved in this conflict instead of rising above and acting as a glue for the whole project. Secondly, the complexity of Greek bureaucracy itself: "*Bureaucratic procedures were so complex that at times they looked impossible to codify and captured by an information system. Greece seemed to be on the verge of proving that IT simply is not advanced enough to help administration!*" (PG 2006).

A confrontation with the often irrational institutional constraints some times entailed challenging the obvious: The ministry operated through sending small teams of both tax experts and IT experts to different tax offices around Greece. The idea was that the tax experts would introduce their local colleagues to the system in a way that would not alienate them by giving them a too technical presentation of the system; rather to deploy them as local allies that would contribute to the diffusion of the system. These missions, however, were subjected to a number of constraints. For instance, if the team was to travel a distance up to 17 miles, they had to leave on the

[67] Before TAXIS, every personal transaction between citizens was subjected to the check that they had fulfilled their tax obligations, which created unnecessary bureaucratic trouble.

day and not the previous day, something which resulted in delays: "*On one hilarious occasion, Salamis, an island close to Athens, was to be visited. I then challenged the view that Salamis was closer to the 17 mile range by arguing more or less that over time Salamis had moved further away from Athens, so as to ensure that the team could travel there the day before and use the full morning of the day in question to work!*" (PG 2006). This was not about individuals being 'sticklers', but rather about an institutional framework placing huge constraints that had to be overcome on a daily basis.

Moreover, there were also political pressures from the shadow government. Parliamentary hearings and 'question-time' was very intense. The discussion took the form of a critique of the government. On one level, critique regarding delays which might render the technology in the meantime obsolete. Secondly, critique with regard to the procedures through which the competition was run. Thirdly, objections regarding the cost of the programme. For the General Secretary, all these revealed "*an intention to de-construct the system*". Notwithstanding the personal involvement and subjective perspective, it does seem that inter-party conflicts were entering the debate on TAXIS, which could have been a discussion around common objectives.

An important source of pressure from the ICT sector was to adopt the newer versions of technology that were coming out instead of focusing on the functionalities required: "*I consider this a Greek characteristic, namely the pursuit of the flashy and the new, which is not necessarily better in terms of functionality. At some point, during a talk, I exclaimed: "Long live Win 3.1!", as there were immense pressure to adopt the newer Win95 or Win98 that had just come out*" (PG 2006).

A roll out of the system on a weekly basis was adopted and more or less the whole country had been covered in three years. Resistances were numerous from various sources. At the level of civil society there were attempts by the trade unions to overstress the negative aspects of the system with the intention of maintaining the status quo. At the level of central and local administration there were negative reactions against the prospect of decentralising operations. This was because civil servants had been used to having a well defined area of authority demarcated in a territorial way, i.e. a specific administrative district that offered also a well-defined

clientele. The idea that citizens could go anywhere in Greece for their tax affairs and were not bound by geographical constraints was not received well by the administration.

Significantly, the citizens had been involved in the project from the beginning. A campaign had focused on the citizen-centric and social character of the system and the need for the citizens to embrace it if it was to be successful. When citizens started experiencing the system, through visiting the tax office and being served in a quicker way, they could see there was more discipline and transparency in the whole operation; characteristically, although citizens were subjected to certain delays because the civil servants had still difficulties operating the system, they would not react, generally speaking, which indicated that the use of the system made sense to them. Subsequently, a strategy was formulated to make certain popular applications available to firms and citizens directly through the extension of the IT infrastructure to what became the TAXISnet project whose services were accessible directly through a web site (www.taxisnet.gr) (Stamoulis, Gouscos et al. 2001). When the first applications (related to VAT) were made available and were successful, exposure was given by journalists, who happened to be the first users.

The TAXIS project is still considered the most successful story in the information society so far. [68] It is an interesting case, firstly because it reflects the complexities and shows the persistence of historical practices of the Greek political processes, public administration and the economy and relevant resistances both from the supply side (administrators) and of the demand side (citizens). Secondly, it is instructive as a case of the state being active in promoting a large IS programme not in isolation, but rather in cooperation and communication with other social partners and citizens: "*An important dimension was that we distributed a leaflet in which we asked for feedback on the system. This was the first time this happened historically in the Greek public administration. The administration was telling the citizen: "Please let me know!" And we had tremendous feedback with a number of proposals and ideas, which we took on*

[68] The programme also received a best practice distinction in Brussels, which was a significant boost, as it helped put online more applications and increased its use.

board" (PG 2006). An interesting dimension was the role of the banking sector. Banks were necessary partners in this, as they were the cashing mechanisms. In the beginning they were reluctant but when they realised that something serious was happening they started competing with each other in order to get large shares.

With TAXIS, it seems that the state proved that it could competently manage the transition to the digital fiscal reality. Through the use of the system, the citizen started feeling respected by the public administration. The culture of how to evade taxation succumbed in many cases (obviously within limits) and more trust was established. At the same time, through the concentration of information, the system could detect tax evasion and this was communicated to citizens who could see that previous tax-evasive practices were not sustainable any longer. TAXIS had also a positive impact on small firms, many of which started using ICTs when the TAXIS applications were made available (XK 2005). It is also important to stress the role of political leadership, as Prime Minister Simitis was interested in the TAXIS and was following its development.

5.8. Discussion

Following the above narrative presentation of the basic dimensions of the information society development process, we now turn to an analysis of the role of the Greek state based on the frameworks of Jessop and Evans.

5.8.1. The Greek state as 'competition state'

During the period 1998-2008, and through the introduction of the OPIS the Greek state has attempted to act as a 'Schumpeterian competition state' within a 'Schumpeterian Workfare Postnational Regime' as in Jessop's conceptualisation. Through its IS policies, the Greek state has undertaken the role of promoting the IS/KBE in both material and discursive terms within a Schumpeterian regime, which:

a) has attempted to promote innovation by supply-side interventions and has played the key role in material and discursive promotion of the globally-informed IS/KBE

b) has sought to accommodate labour market flexibility and economic competitiveness, and in particular has placed great emphasis on education and training with the intention of building a knowledge-skilled workforce, as well enterprises competent in the KBE at the national, municipal, and local level
c) has been postnational, constructed around the EU and its member states, so as to promote a European IS/KBE in accordance with the Lisbon agenda and the eEurope policies and adopting an open method of coordination leaving important steps to be decided at the national level, as well as involving other international institutional arrangements and sub-national and local actors and institutions
d) has been a governance, rather than a government, regime, involving as it has non-state mechanisms, corporate and industrial actors, civil society organisations, professionals, and other experts

The Greek state has to be seen as a government entity, or more specifically, as a Schumpeterian competition state within this Schumpeterian regime. Through its information society policies in the period under examination, the Greek state has attempted to manage the socio-economic transition to the IS/KBE. In doing so, it has anchored its activities and policies in international developments involving different spatial scales, notably by following the spirit of EU directives and policies for the IS/KBE, and has also sought to involve national, sub-national and local government units. In addition, it has operated in an environment of other state and non-state mechanisms, including for instance its interest in evolving public-private partnerships.

In adopting the role of Schumpeterian competition state, the Greek state has absorbed in its approach (as demonstrated in the 1999 White Paper and the OPIS) the international shifts in economic discourse that have been taking place since the 1990s: emphasis on flexibility, lifelong learning, and most importantly on innovation, entrepreneurship and knowledge as an engine for growth and productivity. The Greek government has emphasised the role of the market mechanisms in the development of the information society, the importance of introducing a more flexible regulatory and institutional framework and the significance of the modernisation of public administration through the introduction of ICTs in processes and practices (Leandros and Iosifidis 2003).

The OPIS has been a very ambitious programme because of its horizontal nature, budget, and multiplicity of goals, and has taken into consideration weaknesses of the Greek public sector, which had appeared in the previous CSFs. For instance, it looked for vehicles that could act as catalysts in order to bring about results. One of these has been the IS SA was conceived of as a private company providing consultancy services, but its operations were based on the operations of an improved ministry, i.e. a ministry that would retain its public service function but would also operate in a more rational way, taking into account performance and efficiency. It was to be used as a pilot that would provide the model for how ministries could have transformed into more flexible and efficient structures (SP 2006).

The Greek state has presented elements of the regulatory state ideal type, as summarised by Jayasuriya (2005). In particular, it has provided new regulatory frameworks which are taken to be more suitable in the new economic order. This process has involved adjustment to EU regulatory imperatives and directives, albeit with difficulties and delays in certain cases, not least regarding the telecommunications liberalisation framework and the resistances generated by the incumbent OTE. Further, it has institutionalised new independent regulatory authorities, notably the National Telecommunications and Post Commission (EETT) and the Authority for Communications Privacy Protection (ADAE).

Nonetheless, and in accordance with Jessop's outline of the role of the state in the IS/KBE, the Greek state has not limited its activities to the economic sphere, but has sought (through its IS strategy) to address the whole socio-political sphere and the problems of social cohesion and social conflict as they re-emerge in the IS/KBE. One of the actors involved in the OPIS from the very beginning puts this across clearly: "*The social functions of the state are important, e.g. catering for the needs of the disabled. Improvement of the operational model of the state through technologies is desirable, but not at the expense of the social values that the state stands for*" (SP 2006).

Our empirical study has shown that as far as its IS/KBE *strategy* goes, the Greek state has been paying attention not only to regulatory aspects, but also to more developmental sides of the IS/KBE project, particularly as they are recoined in the

prism of knowledge management (knowledge becoming the acknowledged central asset for economic growth and social development). Through information society policies, the approach of the Greek state has been one trying to balance the commodification of knowledge, through emphasis on intellectual property regimes, with intellectual commons, the social basis and public availability of knowledge. The issue of the nature and character of infrastructures has been repeatedly considered and problematised: "*An important question is the role of the state in a potential evolution of telecommunications separating physical infrastructures (which could be public and controlled by the state) and provision of products and services under conditions of competition on top of these infrastructures and facilities*" (VM 2005).

In the area of broadband, in particular, the relevant White Paper reveals the need to balance competitive forces and state management. Further, it calls for the state to stimulate the broadband market by means of appropriate policies: 'The rapid development of appropriate, generally accessible and affordable broadband infrastructure and the development of relevant applications and services must be set as a top priority for the State. The above national infrastructure, coupled with international broadband connections, is a necessary step in bridging the "digital divide" among citizens, both within and between regions of Greece, thus providing opportunities and potential for regional development of local communities up to a common European standard. The development and use of broadband services by the Public Administration, particularly in the sectors of Education and Health, could be a major enabler in raising awareness and ensuring penetration of these services across the State, promoting their use to citizens and businesses. The State, by actively promoting the development of broadband infrastructures and services can be a catalyst in Greece towards the targets laid down in the European Initiative eEurope 2005' (Ministry of Economy and Finance 2002, p.x-xi). Indeed, the ongoing programme SYZEFXIS is intended to enable municipalities to participate in the IS/KBE and thus to reduce aspects of digital divide and function in a developmental way (KEDKE 2006).

In the light of the above, the Greek policy-makers have promoted the social character of knowledge and its availability to all. Universal service, equal access to information and the participation of all citizens in the emerging IS have been seen as pivotal

(Leandros and Iosifidis 2003). The example of education has been characteristic in this respect, as all primary and secondary institutions have been provided with PCs and have been connected to the Internet. Moreover, in the area of higher education the deployment of the infrastructure of EDET on the one hand, together with equal access to funding granted to all universities and technological institutions has resulted in state-of-the-art ICT infrastructure for all such educational institutions, regardless of their geographical location, prestige or quality of study offered. This constitutes a national differentiation, as this has not been the case in other countries (e.g. the US or Ireland), where access to infrastructures has rather been determined by market forces operating under rationalities of demand, cost, and profit in conjunction with regulation-guided state policies.

Significantly, education (primary, secondary and higher) has been the only domain where all ICT projects have been very early implemented and completed. This was partly due to the design (since 1995), according to which a wide human network was created, which included all Informatics departments and labs, and supported both the local universities and the local schools vis-à-vis the implementation of ICT projects (TK 2005)

At the sub-national level, there have been significant initiatives involving public/private partnerships for the absorption of ICTs in municipalities. In 2004, for instance, the Central Union of Greek Municipalities and Communities (KEDKE) undertook a strategic initiative for the formulation of a development strategy so as to advance the IS/KBE at the local level. This initiative has been carried out in conjunction with a relevant research group on IS/KBE at the National Technical University of Athens and PETA SA, a consultancy firm for local development. There have also been examples of 'digital cities' where a digital platform has been in use, notably the cities of Trikala (www.e-trikala.gr) and Amaroussion (www.maroussi2004.gr). In a document on the challenges of municipalities in the information society, a strong portion of 'public cynicism' is detected vis-à-vis a political system that seems to be democratic in principle, but not in practice. As in standard literature on eGovernment and eDemocracy, the opportunities offered by ICTs are highlighted towards creating social partnerships that bridge the gap between citizens and authorities. The need to go beyond public surveys on ICT deployment is

highlighted and emphasis is placed on the creation of a 'culture of electronic democracy' through Internet dialogue as a means for public participation in legal and other processes (KEDKE 2006, p.20).

The Greek state has also demonstrated considerable eagerness to help enterprises enter the digital era (through the 'Go-Online' and 'eBusiness' initiatives). This can be seen as a developmental attempt to boost the ICT market, in the spirit expressed by the former IS SA president: "*The economic role of the state should be directed towards creating demand conditions in the economy, rather than providing subsidies to support certain firms*" (SP 2006). On that front, the state has set as a target to stimulate demand in the private sector through its own public procurement processes, but this objective has come up against various structural problems as presented above.

5.8.2. The Greek state as 'developmental state'

In Peter Evans's conceptualisation, outlined in chapter 3, the ideal type of the developmental state incorporates the pillars of 'embeddedness' and 'autonomy', which Evans link in his notion of 'embedded autonomy' (Evans 1995). In his discussion of the IT sector in Korea, India and Brazil, Evans attributes the different technological trajectories to different state structures and different state-society relations. In the case of Korea, a robust and coherent bureaucratic apparatus and its dense ties to private industrial capital is seen as the source of technological progress, while the network ties between state and firms have been crucial in developing local IT capabilities.

By contrast, in India, the state/industry relation, at least in the beginning, has been characterised by Evans as 'aloof' and 'semi-adversarial' and not conducive to local IT development. In the Brazilian case, the state was better connected with local entrepreneurs, but its fragmentation presented obstacles in following a programme of transformation and in using the links with local firms effectively; while individual state agencies were cohesive, the overall state apparatus was 'badly divided'. As a result the Brazilian state was not autonomous enough and this was exemplified in the

inability of the Special Secretariat for Information to prevent free rider activity (Evans 1995).

While embeddedness in the above examples refers to links between bureaucracy and private capital, in Evans's subsequent reconceptualisation it is extended and includes multiple groups (i.e. civil society as well). Austria, in his view, presents a fine case of this extended notion of embedded autonomy, including a harmonious combination between a solid bureaucracy, with good links with a well-organised entrepreneurial class, as well as an organised working-class and other civil society groups (Evans 1995). Using Evans's logic, one could argue that Finland presents a combination of solid bureaucracy and well-built links with the economy and the civil society groups and other forces, i.e. a case of adequate 'embedded autonomy'.

The language of 'embedded autonomy' is useful in assessing the role of the Greek state as developmental state in the context of IS/KBE development.

On the dimension of autonomy, the Greek public administration has been systematically subject to abusive interventions by successive governments, through the historic trend of frequent replacement of relevant bodies and top personnel with every government change and of the creation of different layers of employees (what Sotiropoulos calls clientelism from above and from below respectively). The resulting fragmentation and unbalanced distribution of resources have clearly painted their strokes on the canvas of disruption, lack of coherence within public authorities and agencies and non-accumulation of expertise and experience in the Greek public administration. In the context of the IS, these trends have informed the notable absence of a pool of project managers and other skillful personnel aware of technological needs and of the contours of the Greek public administration labyrinth, as has been made evident in the case of the OPIS actions.

The political deployment of the public sector as a mechanism for absorbing excess labour force and for exchange of political favours through the operation of the forces of clientelism has also attributed to the Greek bureaucracy cultural characteristics important in the discussion of the reception of ICTs in public organisation and practices. This reception has seen resistances and the perpetuation of practices which

are not demonstrable of a Weberian bureaucratic culture based on rational/legal expertise, but rather have been informal and often corrupt. Clientelism, rather than meritocracy and accountability, is the key to maintaining these practices: "*One problematic dimension that is characteristic to Greece is the umbilical cord between state and public administration where clientelistic relations dominate and where distinction and career development are related to party affiliation and membership*" (GP 2007). Further, it can be argued that these have been institutionalised by the permanent status that employees in the public sector enjoy.

Negative societal attitudes towards public administration and the pejorative stereotype of having a 'civil servant mentality', which is widespread in Greek society, have also fed on the low self-esteem of public employees who have as a result lacked the incentive to view ICTs as tools to enhance the provision of a public service they do not pride themselves on.

Last, these practices have been sustained by the fact that expectations and declarations of the reorganisation of public administration have not been accompanied by high political and managerial prioritisation and commitment in integrating the new technologies in daily organisational activities and routines in the Greek public sector (Caloghirou and Constantelou 2006, XK 2005).

On the dimension of embeddedness of state mechanisms in the economy, the state/ICT industry links have been characterised by relations of dependence and antagonism, while the links between state and entrepreneurs at the local level have been weak. Despite the comprehensive OPIS strategy, various characteristics of the public procurement system have been perpetuated; as this was a top-down intervention the structural weaknesses pertained: "*Theoretically the political will to proceed was there, but this was not enough, as nothing had changed at the structural level. The strategy took into consideration the Greek needs, but could not have resolved the structural problems the Greek public procurement suffered from*" (TK 2005).

The ICT public procurement profile has presented some, though not all, of the dimensions mentioned by Caloghirou (1993). Specifically, though it has not been

monopolistic in theory, there have been dominant firms which have attributed to it an oligopolistic character. Further, for many firms it has been monopsonistic/oligopsonistic, the public sector being their sole client. This profile has contributed to the establishment of idiosyncratic state/ICT relations. ICT firms, although private, have relied extensively on state promises for funding that either have not been materialised, or have not been accompanied by appropriate monitoring of industrial performance (Voulgaris 2003).

Inflexibilities, rigidities and overlappings and overall inefficiencies in public bureaucracy have been considered the main reason impeding entrepreneurial activity and increasing operational costs in the sector. Corruption and fiscal instability seem to add to the picture. A further problem perceived by the ICT firms is that the existing information society strategy for the public sector is inadequately designed, with no clear short-term and long-term goals and neither supported by a fit institutional framework nor given political priority at the national policy level. The telecoms framework in particular shows delays in the adoption of EU directives with implications for the operation of competition, while the still slow pace of broadband infrastructure diffusion is taken to delay the development of the ICT sector (Observatory 2007a, 2007b, YP 2007, YS 2006, SK 2009, LT 2005, AT 2009).

As for the practices of the ICT industry, they have been overall informed by the path dependencies of Greek industrialisation and public procurement. Opening the 'black box' of the sector itself, extreme antagonisms and the deployment of often questionable or unethical practices seem to dominate the picture. A culture and mentality of low professionalism and short-term profit are dominant, which play a part in limited coordination and collective attitude and inform a superficial approach to ICT projects. With few exceptions,[69] ICT firms have offered generic products with low added value and low knowledge content, have not been innovative, have not built productive, research, and management capacities, have often resorted to clientelistic behaviour and have been complacent in enjoying state spoon-feeding, but not ambitious enough to provide project outcomes and induce change. ICT public

[69] e.g. Mellon, an originally Greek firm providing financial services, which has expanded to become a multinational firm currently employing more than 2,200 people in 11 countries.

procurement has been subjected to various political influences and has not overall functioned as a developmental lever for the ICT sector.

Fragmentation in the activities of the sector and its "shallow" base with low specialisation and knowledge content contribute to the slow development of the sector and the superficial character of the ICT market. This is related to the level of ICT diffusion in households and the public sector, which is indicative of a market that does not invest in innovative products and processes, where firms are not competitive and not capable of developing integrated ICT solutions. A symptom of the lack of maturity is the few occurrences of strategic alliances, which means that firms remain small in size and scope. In parallel, the low level of ICT skills drives down the demand for ICT products and services in SMEs (Observatory 2007a, 2007b).

The ways of engagement of OTE in the OPIS has not been characteristic of embeddedness either. It has been suggested that it could have been used strategically: for instance, to provide broadband services for educational goals, without being subsidised, and make profit out of the provision of services. But lack of political will and a set of strong interests revolving around OTE (and not necessarily understanding the challenges and opportunities involved) ensured that attempts to use the organisation in this way failed (TK 2005).

Last, but not least, the degree of involvement of local entrepreneurs in the process of information society building has been low. Despite attempts to decentralised implementation, often big ICT chains entered the competitions and got the contracts at the expense of smaller local firms (which could not compete in prices); in the case of primary and secondary education, local firms were reduced to subcontracting roles for the large ones, dealing with installation or after sales service.

Regarding the embeddedness of state mechanisms in the society, state/civil society ties have been loose and superficial, while the Greek society has not overall embraced the information society programme.

The involvement of working groups and electronic fora, as indicated in the OPIS structure (Figure 5.1) has to be acknowledged as a step in the direction of increasing

embeddedness in the context of the information society. This novel element has been in line with the EU guidelines for inclusion in the information society and has functioned in two ways: firstly, it has been intended to provide OPIS with technological and socio-economic expertise under conditions of rapid technological and social developments at the international level; secondly, it has been considered a mechanism for diffusion of information and participation in the information society policy processes on the part of scientific, professional, entrepreneurial, and various other social groups belonging to civil society (OPIS 2004). As an element of design, this involvement has been clearly in line with Evans's notion of embeddedness, though the actual composition of the groups in question, the degree to which they can be representative of the Greek society and the extent to which their feedback has been taken into consideration are far from clear.

At the level of implementation, TAXIS has been the best example of a project generating demand for ICT deployment both in the public and in the private sector, and accordingly boosting the ICT market. It has demonstrated political vision and systematic management and leadership in achieving electronically available services. It has also mobilised a certain degree of citizen participation and feedback and can be seen as a case of 'embedded autonomy'. For these reasons TAXIS got roots in the Greek economy and society, gradually changing attitudes towards technology and towards the relationship between the citizen and the state in what regards the former's fiscal obligations to the latter. Its multiplier effects have been limited, but they exist. It could potentially have had more, had it been involved in the rational management of economic resources in various domains, particularly where management of resources is problematic.[70] Placing ICTs in an educational context through projects with central coordination and decentralised implementation in schools involving local actors has also been seen as a sign of increased embeddedness.

For some interviewees, embeddedness entails a more flexible state with decentralised execution of projects: "*The Greek state has not yet understood the strategic role that it has to play. It has not understood that it needs to release some functions and to*

[70] For instance, agriculture, which could have benefited by connecting to the TAXIS system so as to facilitate payments and other transactions, applications for subsidies etc.

undertake certain other functions. Most OPIS initiatives have been centrally executed" (TP 2005). Another aspect of embeddedness has to do with providing adequate support. It has been acknowledged that there should have been better provision of technical advisors/experts who would provide consultancy throughout the processes of project implementation to those entities (ministries, firms, individuals) who did not possess sufficient know-how.

Antagonisms, interests, and the logic of appropriation seemed to have acted against the possibility of embeddedness:
"Imagine a landscape where there is from the beginning a tension between the two ministries involved, a huge public bureaucracy behind them, two authorities (Managing Authority and Information Society SA) that are allocated responsibility for public projects, but belong to the two ministries respectively and reflect the tension between them, seventeen ministries dreaming that the programme belong to them, a sole telecommunication operator OTE, at that point in time, which understands that it has to adapt to new circumstances, but refuses to change and obstructs developments, and a business community where each entrepreneur dreams that the 2.8 billion Euros is only for themselves. Where there are many actors involved and where each of them (ministries, business associations) thinks that they own the totality of the programme what can you expect?" (JK 2006).

The issue of political leadership as a developmental attribute of the state has been time and again invoked:
"*The OPIS was never linked with a broader policy agenda surpassing the logic of funding, i.e. everything done was linked with the funds available and there was no broader political agenda within which somebody would declare that this was a dominant political issue in Greece regardless of the availability of funds. France, for instance, saw the issue in a more developmental way, i.e. linking it with industry, but France had a technological background to do so, while Greece suffered from incomplete industrialisation*" (GP 2006). Indeed, several members of ICT firms and the official SEPE leadership have confirmed this as a basic problem and have persistently called for a high-level IT agenda with the setting of clear and urgent priorities and political responsibility and accountability at the level of a Minister for IT (YS 2006, YP 2007).

In the beginning communication of the OPIS was quite slow and not adequate in addressing Greek society at large; it just generated expectations for the ICT sector. This was considered in retrospect a mistake, as associations such as the Technical Chamber of Greece, or the Economic Chamber have been missed out on. This approach has had negative implications particularly for the soft initiatives of the programme, such as entrepreneurship, the importance of which has been underestimated (YL 2005).

As the first (2002-2004) IS Secretary confirmed, the need for a more general education around ICT issues was not given priority. Rather, there was in the beginning a noted reluctance to fund publicity. The programme was not publicised early on, although the European Commission had asked the OPIS mechanisms to do so. A significant reason why this happened refers again to the structural problems of the state/economy relationship, in this case the relationship between the media and political authorities. There was a fear that publicity would be involved with political processes leading to phenomena of nepotism between media organisations and ministries. This is another recurring structural problem which involves the advertising funds of the various ministries. In the case of information society, "*it did have an impact, in the sense that I was reluctant to sign anything to do with advertising campaigns for fear that there would be subsequent pressures as to who gets the campaign*" (GP 2007). Further, the advertising project (part of the OPIS) faced delays and obstructions of the kind described in the previous section. As a result, for some time there was no separate communication strategy or initiative because the relevant contract had not been signed until at least 2005.

Overall, there has been a lack of social consensus as to what the information society involves at the societal level and what its objectives are. This is owing to the generally recognised fact that there has not been so far a social dialogue of political authorities and implementation mechanisms with citizens, firms and social forces for identification of information society goals. [71] Our interviewees have emphasised that a

[71] This changed to some extent in the preparation of the Digital Strategy 2006-2013, where a public deliberation apparently took place with questionnaires sent to various entities (private individuals,

comprehensive strategy at the level of design was not followed by the identification of a set of strong political priorities, supported by political will, for information society development. [72] This seems to be a historical trend as well: it has been observed that the programmes in all CSFs, including the OPIS, have been operating through the interaction of state mechanisms and experts with ICT sector players, but without clear priorities regarding the societal level and without the building of social consensus towards these priorities.

Certain suggestions have been put forward as to how better integrate social forces. Flexibility and identification of local needs have been emphasised: "*I think that we need to move from large-scale to small-scale projects that will be publicly available for all and can be adaptable to one's own needs. For instance, a cultural portal can be used by a municipality for its own purposes. The positive aspects of such an approach are that you achieve economies of scale and a degree of homogenisation of technology. The negative aspects are that you will need local knowledge to understand one's own needs and have human resources that have the skills and ability to understand how they can apply the available modules to local needs. In this model, the state has to play a role of coordination role, take strategic decisions and invest for all ... What I am saying is that we will have a central implementation mechanism, but you also need to have something for local communities to understand, in order to actually implement projects. In my opinion it is important to try and build synergies at the local level of society: between local authorities, local business, universities of a region, etc.*" (TP 2006). This is clearly towards the direction of greater embeddedness and identifies some of the challenges involved in bringing it about.

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banks, companies, civil society etc.) and analysed, as well as with daily workshops with participation of citizens and about 10 NGOs taking part to discuss the Digital Strategy (YL 2005). However, the impact of this process on the actual drafting of the strategy remains unverified.

[72] In the words of a former President of the Managing Authority "*had the OPIS focused on a small number of strategic priorities made clear in advance, the next step would have been to engage stakeholders and partners towards the implementation of the objectives*" (TK 2005).

5.9. Conclusions

The political ambition to establish a Greek IS/KBE found its expression in the well-designed, ambitious and well-funded OPIS, which was very innovative, in the sense of overcoming fragmentation to produce a centrally directed and homogenised IS policy. At the level of the basic actors involved there was an aspiration that a programme was being designed that would overcome historic structural differences, notably in the public sector (TK 2005).

The experience of putting the programme into practice has nonetheless exposed a number of structural difficulties that were much deeper than its actions could penetrate. The drivers of the information society in Greece have been the government and the OPIS bodies and mechanisms and the ICT sector; for many interviewees, the end users (ministries and the public sector overall) have been characterised by inertia. The push from the government, the pressures from the ICT sector and the inertia of the end users have created a number of deformities in the OPIS (SK 2009).

Overall, the public sector has presented inadequacies both as provider and as consumer of digital applications and services. This has been due to insufficient ICT and project management skills, as well as absence of adequate consultancy services in the public sector. At the micro-level of organisational practices, the introduction of ICTs has been received by institutional inertia and the persistence of informal practices and phenomena of micro-corruption. Over-legalistic and rigid regulatory frameworks add to this complex picture of the south European model of bureaucracy which has confronted information society projects. The rationalisation and digitisation of the public sector is regarded as a sine qua non for ICT-based social transformation (Caloghirou 2003).

Unlike national cases where large ICT firms have acted as leading innovators (e.g. Nokia in Finland), the ICT sector in Greece has been characterised by a very small number of large firms and a vast majority of small and very small enterprises. Corrupt practices have been observed, while a multiplicity of vested interests with short-term economic or political objectives have been involved in public procurement mechanisms. The state/ICT sector interaction patterns are an expression of historically

formulated state/economy relations of dependence which have resulted from the incomplete industrialisation and the small market of the Greek economy (Voulgaris 2003), the fact that the economic accumulation model of Greece has small knowledge and technology content, which are not treated as developmental mechanisms (YC 2008), as well as the tradition of clientelism. In terms of future prospects, interviewees have identified state dependency, the small size of firms and of the market, their introvert behaviour and their low appetite for innovation as the main problems of the sector (AT 2009).

The historically 'idiosyncratic' Greek civil society (partly weak, partly strong in appropriating potential, but in any case feeble in the promotion of universal goals) has not contributed to the evolution of the IS/KBE project in Greece in any substantial way. Social networks and local communities that could help advance the information society by increasing awareness have been limited or characterised by inertia. The absence of a tradition of universality and the prevalence of clientelism and social heterogeneity have denied so far broad processes of social inclusion vis-à-vis the information society project, despite the rhetoric expressed in the OPIS. Limited awareness of potential benefits and dominance of individualism and short-termism have postponed the realisation on a social level of multiplier economic and social effects resulting from the promotion of the information society. Resistances to the prospect of an ICT-related social transformation have been attributed either to technophobia, notably in older individuals, or to a lack of motivation to change practices.

These observations are reflected in the indicators of low ICT usage, which can be interpreted in relation to the lack (in the public sector) of successful applications that could have drawn attention and users. At the same time, the 'critical mass' of Internet users which would create demand for certain applications, services, and information content is yet to be achieved.

These 'negative' impressions are not the entire story of the IS/KBE in Greece. In certain areas of the public sector, e.g. education, where the educators and researchers involved know what the requirements are and are in a position to drive them through, there have been successful outcomes, at least as far as education and research proper

is concerned. The completely different case of TAXIS, centrally designed and planned, but made meaningful the Greek society, has also been met with considerable success. The public sector presents an uneven picture, comprising 'islands' where ICTs have been diffused and are deployed significantly and other environments bearing the classic public sector characteristics (YC 2008). In most successful cases the relevant local communities have been involved (as in the domain of education) but have also been supported by central authorities politically and economically.

Positive aspects have also been identified by ICT representatives, according to recent studies: the Greek ICT sector enjoys human capital with high educational background and entrepreneurial drive and finds itself in circumstances where new markets open up (notably in the Balkans); global economic processes push development and investment, while social acceptance of the new technologies increases; EU funding is available and technological innovation is constant and stimulates demand, while infrastructures become cheaper and there is room for improvement in ICT diffusion in firms, citizens and the public sector. As the ICT market is too small, large firms in particular seek international markets for exports and investment (AT 2009). Certain tendencies have been considered encouraging: in 2007 56.7% of firms (42% in 2006) declared that they were doing business abroad; only 10% of the firms used the public sector for over 50% of their business; investment and employment were on the ascendance, while the rate of innovative products has increased[73], though in most cases this refers to foreign products being adopted (Observatory 2007a, 2007b).

The Greek state has shown signs of operating in the mode of Jessop's competition state, as well as showing a predisposition for a developmental strategy, in rhetoric and in the intentions of some of the experts involved in the OPIS. However, the overall impression from the implementation experience, which summarises the findings in this thesis, is that the Greek state/society coupling has demonstrated limited 'embedded autonomy'. Implementation of policy has been enmeshed in various personal and institutional interests, clientelistic relations and micro-corruption (lack of autonomy of the state from society). At the same time, the information society project

[73] Three out of four firms have put into the market some new or significantly improved product or service in 2005-2006 (Observatory 2007b).

has been designed top-down without social dialogue and with subsequent limited mobilisation of civil society, while the links between state and entrepreneurs at the local level have been weak and presenting problematic aspects (inadequate embeddedness of state into society).

Taking the above into consideration, it is small wonder that the 'interpretation' of information society policies in the Greek context has meant that abstract notions of information society expressed by political ambitions have been in tension with the institutions/organisations used for the implementation of policy, as well as with a number of social norms, procedures and capabilities of various actors and organisations. And that there is hitherto in Greece a lack of an entrepreneurial class interested in informational transformation, as well as of a civil society politically organised towards a similar goal. The tensions and politics involved in the process of information society development in Greece, as exposed in this chapter, shed light on the duality of the Greek IS, where a quite advanced small segment is contrasted with the majority of organisations, firms, households and individuals.

CHAPTER 6: CONCLUSIONS

The starting point of this thesis was a twofold theoretical and empirical research interest: on the one hand, in the place of the nation-state in the light of global forces and processes in the contemporary western world; on the other hand, in the establishment of new societal arrangements emerging in tandem with advances in ICTs. Studying relevant debates, we have created our own set of alliances. Regarding the nation-state, with the critical thinkers who neither underestimate the challenges facing the nation-state, nor overestimate the effect of global forces in bulldozing the state out of contemporary social, political and economic reality. Regarding the information society and the knowledge-based economy (IS/KBE), with the critical thinkers who have been at pains neither to rule out the pervasiveness of ICT-related technical change and its significant contribution to changes in the social realm, nor to exaggerate ICT-related socio-political change as a radical break departing from previous social realities.

The implications of the above have been the following: Firstly, to allow for an active, but also changing nation-state in its forms, functions and roles. Secondly, to approach the study of IS/KBE by drawing on the social, political, economic reality of what has pre-existed, namely of the reality of modernity, in an attempt to build on and extend this (previous) reality to the arguably new arrangements induced by an interaction of the political, economic, social and cultural forces and processes with the ICT present challenges. This latter implication opens the possibility of shaping the emerging IS/KBE depending on particular circumstances. If the national context is taken as the context of interest, examining the role of state mechanisms in the development and type of emerging IS/KBE at the national level becomes a reasonable research agenda. This has indeed created a link between the two starting pillars that has driven this thesis and has been its area of investigation.

Nonetheless, this logical link could not by itself have been enough to provide to a thesis the necessary legitimation. This is even more so because the state/information society relationship seems to be seriously understudied in the literature. Rather, the legitimation needed was drawn from history. The role of the state in economic development has been extensively studied in different historical contexts. More

generally, the state has provided the legal, infrastructural and other underpinnings to the societal arrangements and economic activities of modernity, as May (2002) argues. Further, there have been schools of thought that have linked economic accumulation with social regulation placing state institutions at the centre of these activities, e.g. the French Regulation School.

If one retains the argument about an active contemporary state and about an emerging IS/KBE paradigm of some sort, then examining their relationship or rather the role of the former in the evolution, shaping, implementation, organisation, regulation of the latter becomes acceptable and viable as a research area. This has provided early on a raison d'être to this thesis, as well as a contribution to the thin literature on the subject. Jessop's framework of a Schumpeterian workfare postnational regime (emerging within a broad post-Fordist transformation), part of which is a transformed nation-state shifting its priorities from welfare to flexibility and competition and in particular the promotion, implementation and governance of the emerging IS/KBE paradigm, subsequently provided a useful conceptual framework through which to study the state-IS/KBE relationship.

The second implication mentioned above has highlighted the importance of historical continuities in societal arrangements and social relationships in the present 'information age'. Taking into consideration change, but emphasising historical continuity and the moulding of the IS/KBE paradigm in accordance with the specific context, has alerted us to the value of approaching the IS/KBE in its particular circumstances. Being interested in the national frame of reference, this way of approach steered clear from a lens of homogenisation (i.e. an ideal type of IS/KBE that will eventually emerge in any national context) and towards a study of the variations of the IS/KBE in each national context. Such variations would no doubt result from specificities that existed in the national industrial society and that would either persist in the information age or would be changing in interaction with information society developments towards a unique national information society physiognomy carrying through historical characteristics of the national frame in question.

Indeed, capitalist variation has been studied and the various 'models' (of welfare state, the economy, or institutional arrangements) can testify to this. We have referred to some of these models identifying national differentiations and clustering national case into groups with similar characteristics, but have emphasised that historical continuity does not mean stability and purity of the models in question. 'Recombinant capitalism' (Crouch 2005) has been only one of the terms coined to demonstrate that particular national characteristics can combine with others from different models and generate new cases under conditions of globalisation, liberalisation and IS/KBE. Indeed, we have at certain moments in this thesis resorted to models for analytical purposes (e.g. the south European model of bureaucracy as presented by Sotiropoulos), but our emphasis has been on the historical continuity and the persistence of characteristics, rather than the replication of the entire model itself.

Departing from models, we sought a theoretical approach that could help us study historical continuity and variation by taking into consideration the role of the state. This lens derived from historical sociology and was the state/society approach deployed by scholars such as Theda Skocpol and Peter Evans. The notion of 'embedded autonomy' was thought to be analytically useful in our interpretations of our empirical findings.

Methodologically, as the national context has been central to our approach, we have chosen to ground our theoretical premises to a particular case of emerging IS/KBE, namely the Greek case. Our intention has been to study the IS/KBE developments of recent years, when a coherent information society strategy was formulated and numerous projects were designed and implemented in various areas across the society and the economy. More specifically, to look for national particularities in these developments and to link them with historical antecedents and continuities of the Greek industrial society. Our aim has also been to examine the role of the state in the above developments through its policies and its overall role in the implementation and regulation of the IS/KBE initiatives. In order to carry out these objectives, a conceptualisation of the Greek context was proposed using the state/society approach as a skeleton and providing to it flesh by drawing on authors who have written extensively on the Greek social formation and its particularities. The relevant debates were identified and certain 'Greek' characteristics, historically formulated, were

pointed out and presented through the state/economy/civil society triptych. The usefulness of these characteristics was that they guided the analysis of the empirical material collected through interviews with key experts involved in the information society developments in Greece.

The empirical study set off with the study of policy documents that have been instrumental in shaping the IS/KBE agenda in Greece. We have looked into these in conjunction with corresponding key EU documents in order to understand the underlying philosophy in both cases. There we have found determinist undertones echoing the discourse of IS/KBE as necessity and emphasising the need 'to adopt and adapt to the realities' (Webster 2006, p.267). After the rhetoric, we switched to the reality itself. Using basic statistical indicators, we found a picture of low diffusion and deployment of ICTs in the Greek society at large, a picture that would be conventionally seen as 'lagging behind'.

Subsequently, we carried out a set of interviews with experts involved in some capacity in the information society initiatives and their implementation. Through these interviews, we have acquired a more detailed, elaborate and 'low-level' picture of the difficulties of implementation of policies and projects in the unfolding of the Greek information society, despite following closely the EU rhetoric and having formulated a comprehensive strategy. Moreover, we have been provided with the explanations as to why these problems have occurred. These have had to do with factors such as the institutional arrangements in the public sector that were not seen as 'fit' for the IS/KBE age; antagonistic power relations in policy-making circles; the operation of clientelism in implementation mechanisms at various levels; the lack of a Weberian (rational and efficient) culture in the public administration; the small IT market and the intricate links between the IT sector and the state mechanisms, where again clientelism is predominant; the absence of civil society driving forces that could have given impetus to developments; the apparent lack of interest in information society developments shown by large segments of the Greek population.

By providing an account of how policy-makers organise their operationalisation strategies at the micro-level, as well as of the underlying mechanisms that guide the implementation processes (Caloghirou and Constantelou 2006), we have addressed a

gap in the literature on the information society. What is interesting for this thesis in the light of these findings is not the picture of lagging behind, but rather the persistence of historical societal legacies that have apparently continued to be salient in the context of information society developments. Legacies related to the nature of Greek public administration, the policy-making processes, the state/economy relations, the civil society outlook and modes of operation, as well as cultural characteristics which also have historical underpinnings (e.g. lack of collective spirit and heterogeneity that links back to a postwar era troubled by Civil War and subsequent social divisions).

These characteristic dimensions can only paint a partial picture of current affairs in Greece. There is a number of other aspects that are quite distinct in late developers in general and Greece in particular: the capitalist mode of production, which is embedded in family business, the intense social inequalities, or the particularities of the agricultural sector. For each of these dimensions, it would be interesting to address the following question in relation to their continuing existence or not in the 'information age': are they reproduced in more or less the same form, are they still existent albeit in different forms, intensity and scale, or do they more or less disappear? The answer to these questions is important from the point of view of the emerging type of information society encountered in the national context. Further, there are other dimensions that play a part in the analysis of a national information society and could form research questions, e.g. what are the new social strata that emerge and what are their characteristics? (NM 2007). Such questions are out of the scope of this research but can inform other research agendas related to information society.

The methodological implication of the thesis is that historical studies of societies can be informative of contemporary information society developments. Generalising from the Greek case, we have argued that national variations should be taken seriously in discussions of the information society, as the adoption and implementation of information society policies is a contested process that comes up against these pre-existing historical legacies of the national society in question. Legacies which are expected to contribute both to the trajectory and to the eventual physiognomy of any national information society (as further research in other national cases might

demonstrate). If the establishment of an IS/KBE presupposes a series of organisational, institutional and cultural changes, as commonly assumed in the literature, then these changes cannot be taken for granted. The paths to the establishment of an IS/KBE will be informed by past institutional structures and practices, differentiated in their manifestation, uncertain in their outcomes and context-dependent.

The EU rhetoric on the information society and the knowledge-based economy, as expressed in the early documents and subsequently in the Lisbon Agenda and the eEurope initiatives has clearly promoted an ideal type of an IS/KBE driven by ICT developments. The EU policies have sought to establish a new pan-European social reality with ICTs at the centre of economic and social activity underpinned by a common liberalised telecommunications framework and a digital convergence of different media. In doing so the EU circles have implicitly (and even explicitly) adopted the assumption of non-exceptionality as far as societal arrangements are concerned, i.e. the idea that media convergence and ICT-diffusion will result in societal convergence as well. Our overall contribution has been to argue against a homogenisation approach by drawing on a particular case study. Our research has challenged this ahistorical and shallow vision by demonstrating the persistence of history, variation and national exceptionality. Obviously, exceptionality cannot be the exclusivity of the national frame of reference and our findings open up the possibility of multifarious variations in social, political, cultural and economic arrangements in any scale and any context in the 'information age'; these have to be identified in future research.

Thus, we have offered a critical account, in some detail, of a national case of information society, notably in a broader geographical area (southern Europe) that has been relatively understudied in terms of IS/KBE. At a higher level and by drawing on the Greek case we hope to have contributed to the formulation of more general theoretical propositions as to the articulation of pre-existing and historically shaped state/society configurations with IS/KBE policies in any national context.

In consistency with the continuing importance of nation-state under conditions of globalisation, one central dimension of national variation has been the mode of

intervention of the state itself. Our approach has 'brought the state back in' (Skocpol 1985) regarding the development of the information society. It has highlighted the significance of its policies and functions, together with the importance of non-state forces (e.g. civil society) and their links with state mechanisms. In the Greek case, the state has demonstrated elements of the competition state model (change), but has also kept its traditional style and nature of intervention (continuity); this combination of change and continuity needs to be empirically examined in other national cases in some future research.

Do ICTs and the information age pose significant accountability problems for the state? (Sassen 2000b). If the Schumpeterian competition state, as theorised by Jessop, indeed captures the basic dimensions of the state as a transformed entity functioning as agent of competition acting strategically in an international arena, where it coexists with other economic, political and social agents, does this global system challenge state accountability to its citizenry and by extension its legitimacy? Castells seems to be aware of this problem when he argues that on the one hand states ally themselves with global economic interests and abide by global rules so as to promote productivity and competitiveness of their economies, while on the other 'to be good citizens of a multilateral order, nation-states have to cooperate with each other, accept the pecking order of geopolitics, and contribute dutifully to subdue renegade nations and agents of potential disorder, regardless of the actual feelings of their usually parochial citizens' (Castells 1997, p.308).

Development and the attributes of the developmental state might be able to sustain state legitimacy by defining activities and state roles that are meaningful to citizens. In this respect the role of the state in the IS/KBE is essentially linked with the question of whether the IS/KBE is to be a social transformation important at the national and local levels and also relevant to citizens. If this is so, then the developmental state has certainly a role to play, particularly in the light of the technologically-driven and market-driven agenda of the EU: 'In many cases ... the provision of infrastructure has been well in excess of demand and the expected benefits have not materialised .... In some cases a supply-side approach may be a necessary condition to encourage inward investment, but to encourage use by SMEs and the wider community requires a more proactive stance' (Gibbs 2001, p.74). In the

Greek case, a desirable role of the state can be summarised as follows: enabler of ICT deployment through investment in creating digital content, services, infrastructures and in providing training; activator of firms and the market; supporter of research and development and, most significantly, mobiliser of the entire societal spectrum (Caloghirou 2007).

These roles are in line with Evans's conceptualisation, in which the ability to effect social transformations (and be a developmental state) depends on the autonomy of state mechanisms (including bureaucracies), together with close state/society relations: 'Developmental states must be immersed in a dense network of ties that bind them to societal allies with transformational goals. Embedded autonomy, not just autonomy, gives the developmental state its efficacy' (Evans 1995, p.248).

This outlook also fits contemporary post-national theorisations in which the state co-exists with non-state actors in social regulation and development. Still, the increasing salience of globalisation processes, as well as the different power positions that different states enjoy in the international arena highlight the limitations of a generic theory of the state and its functions. Identifying what a particular state does or should do in a specific context or how states work together towards a goal might be a more fruitful exercise (Sassoon 2008). Generally speaking, however, and given that the information society is potentially inflected in accordance with national, regional, local socio-economic, political, cultural circumstances, the state remains a key actor in the direction that a national information society eventually takes, with respect to the reproduction or otherwise of the nexus of pre-existing idiosyncratic macro-relationships dominant in the society and economy in question, in which the state itself has historically participated. In broader terms, it seems that the state will continue for some time to provide the legally defined and politically authorised regularities, as well as the local powers of coercion and administration that the impersonal capitalist system requires: 'The increasing disparity between the global economy and the territorial nation-state in no way signals the end of capitalism's need, however contradictory, for a spatially fragmented political and legal order' (Meiksins-Wood 2002, p.179).

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APPENDIX I: LIST OF INTERVIEWEES

ROMINA ANASTASSOPOULOU (RA)	Legal Advisor to the Ministry of Health
TAKIS ANTONOPOULOS (TA)	Sales Manager, SPACE Hellas
VASSILIS ASSIMAKOPOULOS (VA)	Special Secretary for the Information Society 2004-2009
YANNIS CALOGHIROU (YC)	Special Secretary for the Information Society 2002-2004
PANAGIOTIS GEORGIADIS (PG)	General Secretary of the Ministry of Finance 1997-2000
GEORGE KARANIKOLOS (GK)	General Manager, Public Sector, LogicDIS
STEFANOS KARAPETSIS (SK)	President, Mellon Group
THEODOROS KAROUNOS (TK)	President of the OPIS Managing Authority 2002-2004
JACQUES KOUNE (JK)	Member of EDET
CHRISTOFOROS KORAKAS (CK)	Advisor to the Special Secretary for the IS 2002-2004
NIKOS KAKKARIS (NK)	President of the IS Observatory 2004-2009
YANNIS LARIOS (YL)	Advisor to the Special Secretary for the IS 2004-2009
KONSTANTINOS LOUKATOS (KL)	Account Executive, Public Sector, SAP Hellas
VASILIS MANGLARIS (VM)	Academic, President of GEANT
NIKOS MOUZELIS (NM)	Academic
STATHIS PANAGIOTOPOULOS (SP)	President of IS SA 2004-2005
GEORGE PAPAKONSTANTINOU (GP)	Special Secretary for the Information Society 2000-2002
YOTA PAPARIDOU (YP)	Managing Director, SyNET
DIMITRIS PAPOULIAS	Academic, President of OTE 1996-1998
NIKOS PERROS (NP)	Sales Director, PANSYSTEMS SA
THANASIS PRIFTIS (TP)	Advisor to the Special Secretary for the IS 2000-2002
KONSTANTINOS ROGALAS (KR)	Marketing and Development Director, Ericsson Hellas
STELIOS SARTZETAKIS (SS)	Member of EDET
YANNIS SYRROS (YS)	President of SEPE 2004-2009
ANGELOS TSAKANIKAS (AT)	Advisor to the Special Secretary for the IS 2002-2004
LAMBROS TSITILAS (LT)	Director of Business Systems, Singular SA
ARISTODHMOS THOMOPOULOS(TH)	President of Public Sector Projects, Diadikasia SA
YANNIS VOULGARIS (YV)	Academic
THANASSIS ZAFEIROPOULOS (TZ)	Executive Consultant, Altec

APPENDIX II: INTERVIEW QUESTIONS

1. What have been the driving forces at the international, national or sub-national level behind the information society policies in Greece? What, if any, can be seen as forces of resistance to such policies?

2. How would you assess the role of political will regarding the design and implementation of information society policies?

3. It has been mentioned that the public sector was not ready for such an ambitious operational programme (the Operational Programme for the Information Society). What have been the structural problems that have been observed?

4. What have been the characteristics of the relationship between the implementing and managing mechanisms of the state and the public administration with the IT sector and market? How can this relationship be characterised in terms of effectiveness vis-à-vis the development of the Greek information society? To what extent and in what ways have inherent features of the Greek society (e.g. clientelism) played a part in the unfolding of this relationship?

5. What cultural characteristics of specific segments of the population or of the Greek society at large do you think that have played/or could potentially play a role either in acting as obstacles or in serving as vehicles for the development of the Greek information society?

6. What has been and what could potentially be the role of civil society regarding information society developments in Greece?

7. What has been the role of OTE in advancing or impeding the implementation of information society policies (including policies for the diffusion of broadband infrastructures)?

8. How would you overall assess the design as well as the hitherto impact of the Operation Programme for the Information Society as the main tool for promoting the information society in a Greek context? What areas of success and what areas of delays/failures can be identified? What changes have been observed at the legal, organisational, institutional, political, cultural level?

9. What future prospects could you identify as to the Greek information society (or Greece in the global information society)?